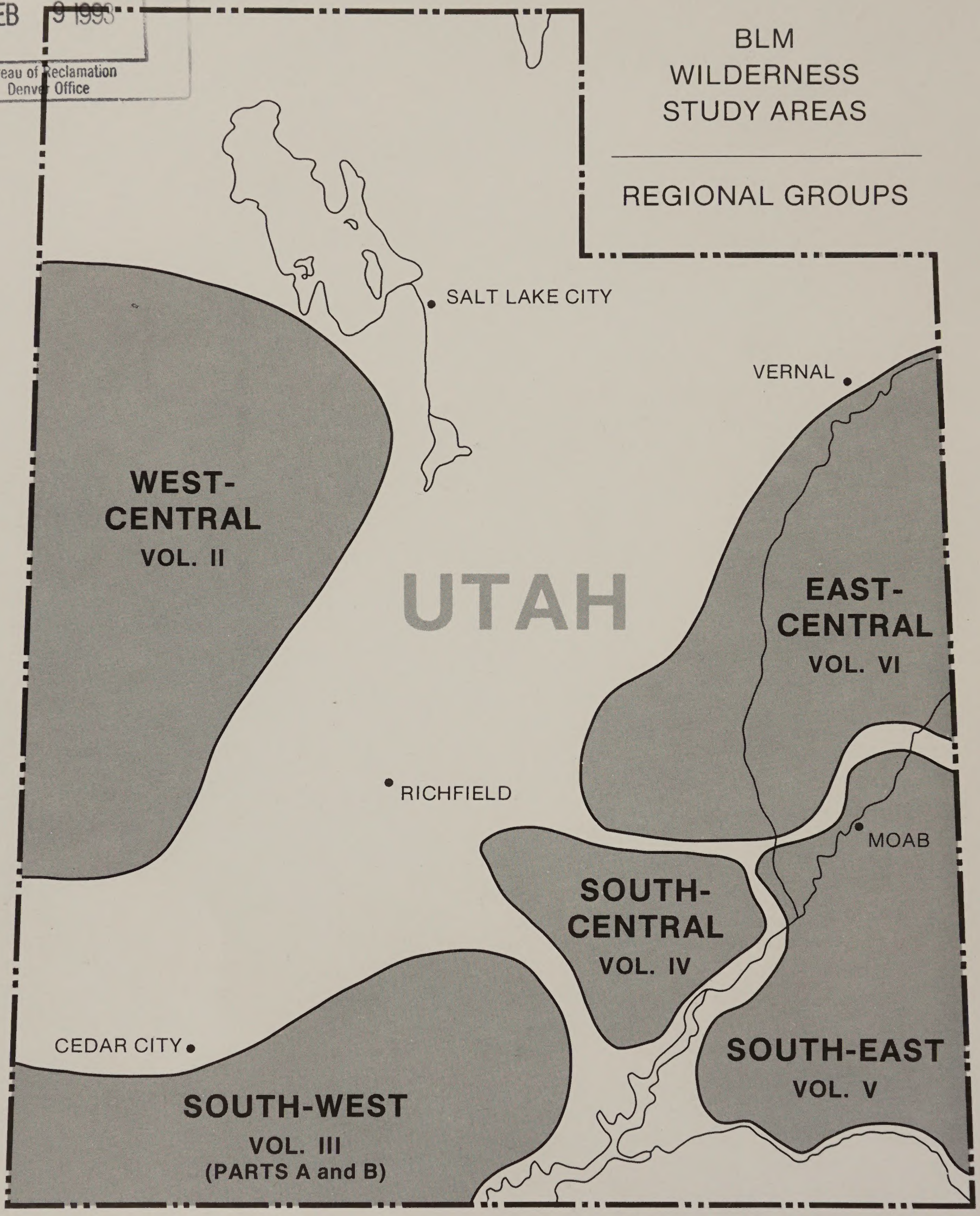
BLM LIBRARY
88071596
OA
V.2
C.1

Utah BLM Statewide Wilderness Final Environmental Impact Statement

Volume II West-Central Region

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

LIBRARY
FEB 9 1993
Bureau of Reclamation
Denver Office



This is **Volume II** of a seven volume set. Volume I is the state wide overview. It contains the Glossary and Appendices for all volumes. Volumes II-VI contain analyses for individual Wilderness Study Areas. Volume VII (parts A and B) contain public comments and responses.

ID 88071596

QH
76.5
.U8
U82
1990
V.2

INTRODUCTION TO VOLUME II -- WEST-CENTRAL WSAs

The Utah Bureau of Land Management (BLM) Statewide Wilderness Final Environmental Impact Statement (EIS) is comprised of seven volumes which include one individual analysis of each of 83 Wilderness Study Areas (WSAs) (Volumes II through VI), a Statewide overview (Volume I), and public comments and responses on the Draft EIS (Volume VII). The individual WSA analyses are grouped into volumes by geographic location. Volume II is comprised of individual analyses of the following eleven WSAs located in the West-Central Region of Utah:

Map Reference Number	WSA	Acres
1	North Stansbury Mountains	10,480
2	Cedar Mountains	50,500
3	Deep Creek Mountains	68,910
4	Fish Springs	52,500
5	Rockwell	9,150
6	Swasey Mountain	49,500
7	Howell Peak	24,800
8	Conger Mountain	20,400
9	Notch Peak	51,130
10	King Top	84,770
11	Wah Wah Mountains	42,140

The alternatives analyzed for each WSA are: No Action/No Wilderness designation and All Wilderness, which would be designation of the entire WSA to the National Wilderness Preservation System (NWPS). In addition, one or more Partial Wilderness alternatives are analyzed, where designation of a portion of the WSA would avoid conflicts between wilderness management and development and use of other resources, or where certain portions of WSAs have low quality wilderness values. Partial wilderness alternatives, based on wilderness values, would designate the portions of the WSA with outstanding opportunities for solitude, primitive recreation, and special features that are within a manageable boundary.

CHANGES FOR THE FINAL EIS

In response to public comment, and changing resource conditions and plans, the following changes have been made for the Final EIS for all of the West-Central WSAs:

1. The sections entitled Alternatives Considered and Eliminated from Detailed Study discuss citizen alternatives suggested during the public comment period.

2. New statements that further explain management of water resources, aircraft overflights, cultural resources, noxious weeds, and predators have been added to the Analysis Assumptions and Guidelines for All Alternatives.

3. The sections entitled Affected Environment include new or updated information on wilderness values, geology, water resources, soil reclamation potential, threatened and endangered species, mineral resources, livestock grazing, land use plans, and economic conditions.

4. Issue identification sections have been revised and expanded.

5. The environmental consequences of alternatives described in the individual analyses have been modified to address only significant issues.

6. The Analysis Assumptions and Guidelines for All Alternatives has been moved to the Introduction to Volume II. The specific assumptions on potential future activities inside the WSAs have been changed as described in the Action Scenarios in the descriptions of the alternatives analyzed in the individual WSA analyses.

7. The State of Utah's position on exchange of in-held State lands has changed from requiring exchange of inholdings, to exchanging only on a case-by-case basis to be determined by the State in the future (see Chapter 1 in Volume I). In the Final EIS, it is assumed that State lands would not be exchanged, and access to in-held State sections could be required following wilderness designation.

8. The bibliographies for the individual WSAs have been merged into a comprehensive bibliography that is located at the end of Volume II.

Additional changes specific to WSAs are identified in the Introductions to the WSA analyses.

ISSUE IDENTIFICATION

BLM used the information obtained from scoping meetings, workshops, comments received during the public comment period on the Draft EIS, and input from BLM professionals to identify the issues for detailed analysis. Issues related to wilderness in general are addressed in Volume I, the Statewide overview.

INTRODUCTION TO VOLUME II: WEST-CENTRAL WSAs

Several Statewide issues also pertain to the West-Central WSAs.

In determining the significance of issues, BLM considered the nature and magnitude of potential impacts, resources covered by law, requirements of BLM's wilderness review guidelines, and the level of public interest or concern over the potential impacts.

ISSUES CONSIDERED BUT NOT ANALYZED IN DETAIL FOR THE WEST-CENTRAL WSAs

1. Air Quality: The public has expressed concern that wilderness designation could lead to redesignation of WSAs from the existing Class II, Prevention of Significant Deterioration (PSD) classification, to the more stringent Class I rating. A PSD Class I area could restrict future industrial developments in West-Central Utah. Since BLM's Wilderness Management Policy (found in BLM Manual 8560) states that BLM will manage all wilderness areas to comply with the existing air quality classification, wilderness designation or nondesignation would not cause the air quality classification to change. The decision to change air quality classification is the prerogative of the State of Utah, rather than BLM. In addition, the anticipated developments in the West-Central region WSAs are small and would meet the constraints of Class II PSD guidelines. Therefore, impacts on air quality are not analyzed in detail for the West-Central WSAs.

2. Geology and Topography: Several of the West-Central WSAs contain outstanding examples of block and attenuation faulting. The public has expressed concern that only wilderness designation can adequately protect these features. The only potential threats to these features would be blasting and surface mining on a scale much larger than any projects anticipated for the WSAs. Therefore, impacts on geologic and topographic features are not a significant issue for any of the West-Central WSAs.

3. Soils: The public is concerned that without wilderness designation, mineral development, land treatment, or ORV use would occur on fragile desert soils that are not easily reclaimed, leading to unacceptable increases in soil erosion. Within the foreseeable future, the anticipated surface disturbance from mineral developments in the West-Central WSAs without wilderness designation ranges from none to about 48 acres (see the assumed Action Scenarios in the individual WSA analyses) and mitigation would be required through the unnecessary and undue degradation requirements of 43 Code of Federal Regulations [CFR] 3809, or as stipulated by leases.

The West-Central WSAs are located in the closed Basin and Range Physiographic Province, and increases in erosion would not affect major streams or drainages. With the exception of the Rockwell and Cedar Mountains WSAs, terrain and surface features generally restrict vehicles to existing trails, ways, and cherry-stemmed roads. The Rockwell WSA is closed to vehicular use by the House Range RMP, and the Cedar Mountains WSA has high natural geologic erosion. Therefore, increased soil erosion is not a significant issue for the West-Central WSAs.

4. Water Rights: In November 1985, U.S. District Court Judge John Kane ruled (Sierra Club vs. Block) that Federal wilderness in Colorado carries an implicit water right. The public is concerned that wilderness designation would interfere with development of existing water rights and would establish Federal reserved water rights that would conflict with future filings, transfers, or changes in points of diversion for water use. After study of the issue by the Department of Interior Solicitor, the Secretary of the Interior asked the U.S. Attorney General's office for concurrence with the Solicitor's opinion. On July 28, 1988, the Attorney General's office (Meese, 1988) concluded that no legally sufficient basis exists for an implication of Federal reserved water rights for wilderness purposes. Therefore, impacts on water rights is not considered a significant issue for analysis in the Final EIS.

5. Land Use Plans and Policies: Issues related to land use plans and policies include (1) consistency of wilderness designation with the plans and policies of BLM, other Federal agencies, and State and local governments; (2) impacts on management and use of inheld private and State lands; (3) use of air space over the WSAs by the military; and (4) impacts on special land use designations, existing facilities, and future proposals for rights-of-way for communication facilities, power transmissions lines, pipelines etc.

Wilderness designation as proposed in the Utah BLM Statewide Wilderness Final EIS is not addressed in the current BLM land use plans. Wilderness designation is part of the BLM multiple-use concept, and the Statewide Wilderness EIS is linked to the current plans through inclusion of the plans as the No Action/No Wilderness Alternative. Congressional designation of all

or part of any of the WSAs would amend the applicable BLM land use plans.

The Federal Land Policy and Management Act (FLPMA) and BLM's Wilderness Study Policy (USDI, BLM, 1981) require BLM to consider and document the extent to which BLM's recommendations are consistent with the plans and policies of other agencies and governments. Wilderness designation is perceived by State and local governments as a threat to development of in-held State lands. The Utah State Legislature passed S.C.R. No. 1 in 1986 opposing any additional wilderness designation. The Consolidated Local Government Response to Wilderness (Utah Counties, 1986) also opposes wilderness designation of BLM lands in Utah. Designation of all or part of any WSA would not be consistent with the policies of State and local governments. The current policy of the State of Utah is to maximize economic returns and to reserve its position regarding exchange of in-held State lands (see Chapter 1 in Volume I). Given this position, BLM assumes that reasonable access would be provided to in-held State lands in response to proposals for development and use. Therefore, impacts on development of in-held State lands are not analyzed in detail. Likewise, BLM's Wilderness Management Guidelines require that access be provided to in-held private lands, and impacts of designation on the use of private lands are not an issue for detailed analysis. Volume I provides additional information regarding State and private in-holdings.

The West-Central WSAs are in the South Range of the United States Air Force's (USAF) Utah Test and Training Range where the USAF conducts low level training missions. The current policy of the USAF is that low level flights would continue regardless of wilderness designation. BLM and the Federal Aviation Administration (FAA) do not have authority to control overflights. Nevertheless, if all or part of any WSA were designated as wilderness, BLM and FAA would recommend a minimum flight elevation of 2,000 feet for protection of wilderness values. Military use of air space over the designated areas would not be consistent with that recommendation.

The current plans and policies of the various agencies and governments relative to wilderness designation are described in the Affected Environment sections of the individual WSA analyses, under the heading, Land Use Plans, but consistency with land use plans is not analyzed in detail for each of the alternatives because further analysis would lead only to restatement of the conflicts explained above.

The effects of wilderness designation on specific proposals and existing facilities or rights in WSAs may or may not be significant issues. Refer to the Issue Identification sections found in the Introductions to the individual WSA analyses for further discussion on these and other resource-related issues not presented here.

ANALYSIS ASSUMPTIONS AND GUIDELINES FOR ALL ALTERNATIVES

The following analysis assumptions and guidelines are applicable to the analysis of the WSA alternatives described in the Final EIS:

1. The alternatives would be carried out as cited in the Description of the Alternatives section.

2. For the No Action/No Wilderness Alternatives, and the nondesignated portions of WSAs with the Partial Wilderness Alternatives, it is assumed that BLM would manage according to the current BLM land use planning document. The following general management practices would apply to all of the West-Central WSAs:

BLM would establish and maintain land use management practices which assure the protection of water supplies and aquatic habitat from chemical, physical, or biological deterioration as defined by the Environmental Protection Agency (EPA) and State water quality standards to protect the health of the public and other beneficial uses.

Private, commercial, and military aircraft use of airspace over the WSA would continue as at present.

Cultural resources would be protected by provisions of the Uniform Rules and Regulations (43 CFR 3) to carry out the Antiquities Act, the Historic Sites Act, Executive Order 11593, the National Historic Preservation Act, and the Archaeological Resources Protection Act. Cultural resources could be excavated, stabilized, or interpreted without regard for wilderness values.

Prior to authorizing surface-disturbing activities, BLM would consult with the U.S. Fish and Wildlife Service (FWS) as required under the provisions of the Endangered Species Act. Appropriate measures would be taken to protect endangered, threatened, or sensitive species.

Measures to control fire, insects, noxious weeds, or disease would be taken as required, if in conformance with land use plans and BLM guidelines.

Activities for the purpose of gathering information would be allowed by permit provided they are carried out in an environmentally sound manner.

Hunting would be allowed subject to applicable State and Federal laws and regulations.

Control of predators would be allowed without wilderness considerations and would be conducted according to State law and the Animal and Plant Health Inspection Service (APHIS) guidelines. Methods of control would be determined as appropriate.

3. With the All Wilderness Alternatives, and for the portions of the WSAs that would be designated as wilderness with the Partial Wilderness Alternatives, it is assumed that BLM would manage according to provisions of the BLM Wilderness Management Policy (BLM Manual 8560). The following general measures would apply to all WSAs (see Appendix 1 in Volume I).

All designated areas would be withdrawn from mineral location and closed to new mineral leasing and sale.

Livestock grazing would continue as authorized in the BLM land use plans. New rangeland developments would be allowed on a case-by-case basis if necessary for rangeland and/or wilderness protection and effective management of these resources. Occasional use of motor vehicles, motorized equipment, or mechanical transport may be permitted where practical alternatives are not available.

New water resource facilities or watershed activities (not related to rangeland or wildlife management) would be allowed only if they would enhance wilderness values, correct conditions presenting imminent hazard to life or property, or if authorized by the President pursuant to Section 4(d)(1) of the Wilderness Act (Eighty-Eighth Congress of the U.S., 1964)

BLM would establish and maintain land use management practices which assure the protection of water supplies and aquatic habitat from chemical, physical, or biological deterioration as defined by the EPA and State water quality standards to protect the health of the public and other beneficial uses. Management practices would be consistent with the BLM Wilderness Management Guidelines.

Prior to authorizing surface-disturbing activities, BLM would consult with FWS as required under the provisions of the Endangered Species Act. Appropriate measures would be taken to protect endangered, threatened, or sensitive species.

Wildlife transplants or habitat developments would be allowed if compatible with wilderness values. Projects would be considered for approval on a case-by-case basis.

Designated areas would be closed to off-road vehicle (ORV) use except for users with valid existing rights if approved by BLM in accordance with 43 CFR 2920 provisions.

Specific Wilderness Management Plans would be developed that would guide the use and protection of the wilderness areas. It is assumed that a maintenance and use border would be allowed along roads that are adjacent to or cherry-stem the wilderness areas, for purposes of road maintenance, temporary vehicle pull-off, and trailhead parking. This border would be up to 100 feet from the center line of the road's travel surface.

Private, commercial, and military aircraft use of airspace over the WSA would continue, but a minimum elevation of 2,000 feet would be encouraged by BLM and FAA.

Harvest of forest products would not be allowed in designated areas, except for harvest of pine nuts or noncommercial gathering of dead-and-down wood, if accomplished by other than mechanical means for use in the wilderness. Increased vehicular access for harvest of forest products would not be allowed.

Cultural resources would be protected with the various antiquities and cultural resource protection acts. However, in most instances they would be subject to the forces of nature; and study and management would not normally include any excavation, stabilization, or interpretation activities. Exceptions would be allowed on a case-by-case basis after special approval of BLM's State Director.

Visual resources would be managed in accordance with Visual Resource Management (VRM) Class I standards which generally allow for only natural ecological change.

Measures to control fire, insects, noxious weeds, or disease would be taken in designated areas in instances that threaten human life, property, or high-value resources on adjacent nonwilderness lands, or where unacceptable change to the wilderness resource would result if the measures were not taken. Measures taken would be those having the least adverse impact to wilderness values (i.e., those that least alter the landscape or disturb the land surface). Therefore, it is assumed that fire fighting would be limited to hand and aerial techniques.

Any activity for the purpose of gathering information about natural resources would be allowed by permit provided it is carried out in a manner compatible with the preservation of the wilderness resource. Research and other studies would be conducted without use of motorized equipment or construction of temporary or permanent structures unless no other feasible alternatives exist.

Hunting would be allowed subject to applicable State and Federal laws and regulations, but would be limited to nonmotorized access.

Where control of predators is necessary to protect endangered or threatened wildlife species, or on a case-by-case basis to prevent special and serious losses of domestic livestock, it would be accomplished by methods directed at eliminating the offending individuals while at the same time presenting the least possible hazard to other animals or to wilderness visitors. Poison baits or cyanide guns (M-44s) would not be allowed. Approval of a predator control program would be contingent upon a clear showing that removal of the offending predators would not diminish the wilderness values of the areas.

4. Future users in WSAs would meet requirements for all applicable Federal, State, and local permits. Stipulations, mitigating measures, and reclamation procedures would be carried out in compliance with Federal, State, and local laws and regulations.

5. Designation of an area as wilderness would not result in impacts due to direct disturbance of resources. Any direct disturbance of resources with wilderness designation would result from use of prior rights that must be recognized by BLM. Such disturbance could occur with or without wilderness designation.

6. The impacts of wilderness designation would result from: (a) protection of certain resources; (b) denial of opportunity to develop certain resources; or (c) restrictions on or changes in allowable management practices and land uses.

7. The short term is defined as that time from the present to the year 2020. The long term is defined as beyond the year 2020. The term foreseeable future refers to both the short and long terms in reference to activities that are likely to occur in the WSA.

Although the degree of future development cannot be predicted accurately, assumed Action Scenarios are presented for analysis purposes in the descriptions of the alternatives. Based on known plans and proposals, known estimated resource values, and projections of future economic conditions, the Action Scenarios describe activities likely to occur in the WSAs over the foreseeable future, if the alternative is implemented.

8. Development potential in many WSAs has been divided into short-term and long-term projections. Even within the short term the quality of data varies. From the present time to about the year 2005, there are relatively good data with which to make development projections. From the year 2005 to the year 2020, little data exist. Development expectations are more speculative. Surface disturbance figures, and subsequent environmental impact analysis in the Final EIS, are based on activities projected in the foreseeable future.

9. Mineral evaluations and estimates of in-place mineral resources are based on a mineral resource evaluation of the WSAs by the Science Applications, Inc. (SAI), U. S. Geological Survey (USGS), and Bureau of Mines (USBM) Mineral Survey Reports, where available, and subsequent evaluations conducted by BLM personnel (SAI, 1982). These estimates are generally based on literature studies and known mineral and energy activities in the vicinity of the WSAs. The analysis estimates the potentially recoverable mineral resources and then, using BLM's field experience and judgment, determines the probability of short-term and long-term development. Appendix 6 in Volume I explains the methodology for mineral exploration and development projections, and Appendix 10 explains the methodology for estimating surface disturbance from projected activities in the WSA.

10. It is assumed that, once designated, management of WSAs as wilderness would continue over the long term.

11. The environmental consequences of alternatives analyze only the significant issues identified in the Introductions to the WSA analyses.

Volume II
West-Central Region

North Stansbury Mountains WSA

Cedar Mountains WSA

Deep Creek Mountains WSA

Fish Springs WSA

Rockwell WSA

Swasey Mountain WSA

Howell Peak WSA

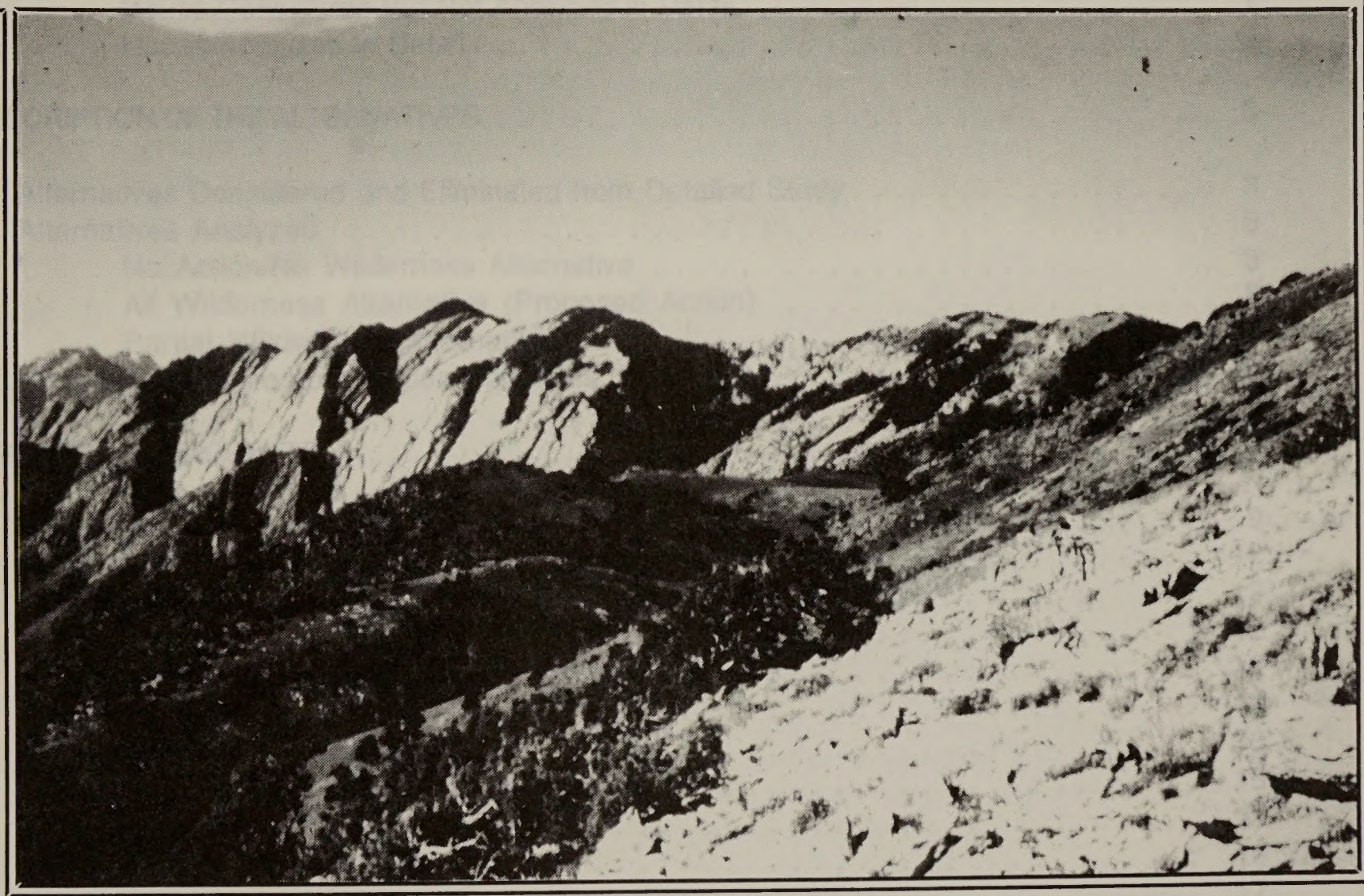
Conger Mountain WSA

Notch Peak WSA

King Top WSA

Wah Wah Mountains WSA

North Stansbury Mountains WSA



NORTH STANSBURY MOUNTAINS

TABLE OF CONTENTS

INTRODUCTION 1

General Description of the Area 1
Changes for the Final EIS 1
Specific Issues Identified Through Scoping and Public Comment 1
Issues Considered But Not Analyzed in Detail 1
Issues Analyzed in Detail 3

DESCRIPTION OF THE ALTERNATIVES 3

Alternatives Considered and Eliminated from Detailed Study 3
Alternatives Analyzed 3
No Action/No Wilderness Alternative 3
All Wilderness Alternative (Proposed Action) 5
Partial Wilderness Alternative 7
Summary of Environmental Consequences 9

AFFECTED ENVIRONMENT 9

Wilderness Values 9
Air Quality 12
Geology and Topography 12
Soils 12
Vegetation Including Special Status Species 12
Water Resources 13
Mineral and Energy Resources 13
Wildlife Including Special Status Species 15
Forest Resources 16
Livestock and Wild Horses/Burros 16
Visual Resources 17
Cultural Resources 18
Recreation 18
Land Use Plans 19
Socioeconomics 19

ENVIRONMENTAL CONSEQUENCES OF ALTERNATIVES 21

No Action/No Wilderness Alternative 21
All Wilderness Alternative (Proposed Action) 22
Partial Wilderness Alternative 24

NORTH STANSBURY MOUNTAINS

(UT-020-089)

INTRODUCTION

General Description of the Area

The North Stansbury Mountains WSA contains 10,480 contiguous acres of public land located in the northeastern quadrant of Tooele County, 40 miles west of Salt Lake City. This WSA possesses unusual natural qualities of varied topography; deep canyons, steep slopes, vertical ledges, and divergent alpine relief that, in combination, provide majestic vistas, growth zones of varying density, and unique ecological character. Vegetation includes juniper and conifer forests.

The difficulty of access has restricted past uses, thus preserving a primeval character and influence that offer outstanding solitude, and dispersed primitive and unconfined types of recreation. This WSA is basically triangular in shape, 6 miles long and 3 miles wide. Elevation varies from 8,800 feet in the south to 5,200 feet along the northern base of the unit, a 3,600-foot displacement. Landform is angular, displaying extremes of relief. A single ridge, the leading edge of an eastward-tilted faultblock, dominates the landscape and provides the unit with a backbone from which east, west, and north aspects give rise to steep, twisting, V-shaped canyons.

Estimated annual precipitation ranges from 19 inches along the unit's 5,200-foot baseline contours, to 25 inches at the 8,800-foot south boundary. Temperatures range from a low of -30 degrees Fahrenheit (F) in the winter to over 105 degrees F in the summer.

Changes for the Final EIS

In addition to the changes noted in the Introduction to Volume II, the following changes, specific to the North Stansbury Mountains WSA, have been made since publication of the Draft EIS.

1. A small portion of the boundary of the WSA (T. 1 S., R. 7 W., sec. 34) has been redrawn to correct an error in the Draft EIS maps. This change did not require acreage adjustments because acreage calculations were based on the boundaries as shown in the inventory document and Final EIS.

2. The Draft EIS identified a Partial Wilderness Alternative (10,000 acres) with a variation (8,700 acres). These alternatives were established with the objective of eliminating conflicts with mineral resource values and five mining claims (the WSA contained six claims when the Draft EIS was issued). However, the 10,000-acre alternative did not eliminate all five mining claims from within the partial wilderness boundary. Therefore, the Final EIS focuses on a single Partial Wilderness Alternative of 8,700 acres which would eliminate all existing mining claims from the designated area.

3. The BLM Proposed Action in the Draft EIS was the Partial Wilderness Alternative (10,000 acres). The BLM Proposed Action for the Final EIS is the All Wilderness Alternative (10,480 acres). Refer to Appendix 11 in Volume I for a summary of the rationale.

4. The anticipated surface disturbance presented in the Draft EIS (216 acres) was based on the assumption that all mineral and other resources potentially within the WSA would be developed sometime in the future without consideration of technical or economic feasibility. In response to public comments relative to the feasibility of developments, the disturbance estimates have been revised to focus on activities projected to be feasible within the foreseeable future (see Appendix 6 in Volume I). This resulted in a reduction of surface disturbance estimates from the 216 acres reported in the Draft EIS to 2 acres of surface disturbance for the Final EIS.

Specific Issues Identified Through Scoping and Public Comment

- Issues Considered But Not Analyzed in Detail

In addition to the issues discussed and dropped from further consideration in the Introduction to Volume II (i.e., air quality, geology and topography, soils, water rights, and land use plans and policies), the following issues or impacts specific to the North Stansbury Mountains WSA were considered but are not analyzed in detail in the Final EIS for the reasons described below.

STATEWIDE
POCKET MAP
WSA
NO. 1
SEE VOL.I

NORTH STANSBURY MOUNTAINS

1. Vegetation Including Special Status Species: Estimates of surface disturbance without wilderness designation have been revised downward from the 216 acres reported in the Draft EIS to 2 acres of mineral-related surface disturbance in the Final EIS. Given this new scenario, the impacts of direct disturbance of vegetation would be reduced and would not be significant with any of the alternatives (less that 0.1 percent of the WSA). There are no threatened, endangered, or other special status plant species known to occur within the WSA. In any event, BLM would conduct site-specific clearances of potentially disturbed areas and consult with FWS concerning impacts on threatened or endangered plant species. Therefore, impacts on vegetation are not analyzed in detail for the North Stansbury Mountains.

2. Water Resources: There are no perennial streams, only one intermittent spring, and no proposed water developments in the North Stansbury WSA. Existing water developments could be maintained as in the past and would not be affected. Therefore, impacts on water quality and uses are not discussed in detail.

3. Wildlife Including Special Status Species: The public is concerned that without wilderness designation mineral or other developments would destroy wildlife habitat and lead to reductions in wildlife populations. They are also concerned that use of ORVs would disturb wildlife and destroy habitat. The North Stansbury Mountains WSA provides habitat for a variety of animal species. Two endangered and nine other special status animal species may be found in the WSA.

Only 2 acres of disturbance are expected in the WSA in the foreseeable future. Important wildlife habitats would not be lost. Terrain and surface features generally restrict the use of ORVs to roads and ways. Given these conditions, the impacts on wildlife habitat and populations are not significant issues for the Final EIS.

The Utah Division of Wildlife Resources (UDWR) has proposed transplants of Rocky Mountain bighorn sheep and Rocky Mountain elk in the WSA. The bighorn sheep could be allowed with or without wilderness designation. The Tooele MFP does not allow for transplants of elk, and they would not be allowed with either alternative. Therefore, impacts on the UDWR proposals are not considered to be a significant issue in this Final EIS.

4. Forest Resources: The coniferous forest resources in the WSA are limited and could not be logged at a profit. Juniper stands have less than 25 percent crown density and are inaccessible. For these reasons, impacts on forest resources are not significant issues for analysis in the Final EIS.

5. Visual Resources: As discussed above for vegetation, only 2 acres of surface disturbance are projected for the WSA in the Final EIS. Therefore, visual resources would not be significantly affected. Visual resources are not addressed in the Final EIS as a separate topic, but are addressed in relation to naturalness in the Wilderness Values sections.

6. Cultural Resources: Cultural resources could be destroyed by surface-disturbing projects, use of vehicles, or vandalism. Only four cultural resource sites have been recorded in or near the WSA. With only 2 acres of mineral-related surface disturbance, limited vehicle use, and inventories for the purpose of site recordation and mitigation of impacts prior to any surface disturbance, impacts on cultural resources are not significant issues for the North Stansbury Mountains WSA.

7. Recreation: The public has expressed concern that wilderness designation would change recreational use from motorized to primitive or, conversely, that without wilderness designation motorized recreation will eliminate or reduce opportunities for primitive recreation. The majority of the recreational use of the North Stansbury Mountains WSA would remain primitive with or without wilderness designation due to the terrain of the WSA and limited access (2 miles of ways). Therefore, impacts on recreation use would not be significant and they are not analyzed in detail in the Final EIS.

8. Economic Conditions: The public, including State and local government, is concerned that wilderness designation would preclude mineral or other economic developments and adversely affect local economic conditions. Others believe that primitive recreation use would increase following wilderness designation and would contribute to the local economy.

There are no existing or anticipated major mineral developments or proposals for lands or realty activities which would be impaired with or without wilderness designation. Because major economic developments are not expected and because recreational use would remain primitive with any alternative, impacts on economic conditions for the North Stansbury Mountains WSA are not significant issues for the Final EIS.

NORTH STANSBURY MOUNTAINS

• Issues Analyzed in Detail

The significant issues for the North Stansbury Mountains WSA are:

1. Impacts on the wilderness values of naturalness, opportunities for solitude and primitive recreation, and special features.

2. Impacts on mineral and energy resources exploration and production.

3. Impacts on livestock management, including vehicle access and predator control.

Comments made during the public comment period for the Draft EIS centered mainly on the inventory phase of the wilderness review and questions on BLM's assessment of the value of wilderness versus other resource values. See Volume VII-B for responses to general comments applicable to all WSAs and/or the Statewide analysis, and Volume VII-C, Section 1, for responses to specific comments about the North Stansbury Mountains WSA.

DESCRIPTION OF THE ALTERNATIVES

Alternatives Considered and Eliminated from Detailed Study

An alternative that would add an undetermined amount of Federal and private lands on the northern end of the WSA was suggested in the public comments. This alternative is not analyzed because the inclusion of private lands is not consistent with BLM's wilderness review guidelines and because other public lands were dropped from study during the inventory phase. Other citizen-proposed alternatives are comparable to the All Wilderness Alternative of 10,480 acres and offer no major distinctions beyond the alternatives analyzed in the Final EIS.

Alternatives Analyzed

Three alternatives are analyzed for this WSA: (1) No Action/No Wilderness; (2) All Wilderness (Proposed Action) (10,480 acres); and (3) Partial Wilderness (8,700 acres). A description of BLM's management practices with each alternative follows. Where management intentions have not been clearly identified, assumptions are made based on management projections. These assumptions are indicated in each case. The assumed BLM management actions presented in the Introduction to Volume II are also applicable.

• No Action/No Wilderness Alternative

With this alternative, none of the 10,480-acre North Stansbury Mountains WSA would be designated by Congress as part of the NWPS. Although BLM's land use plans are regularly updated, it is assumed that the area would continue to be managed in accordance with the Tooele Planning Area Management Framework Plan (MFP) and supporting activity plans (USDI, BLM, 1984c).

There are no State lands within the WSA (refer to Map 1). Figures and acreages are for Federal lands only.

• Management Conditions and Constraints

All 10,480 acres would be open to mineral location, leasing, and sale. Development work, extraction, and patenting would be allowed on five existing mining claims (about 100 acres) and future mining claims. Development would be regulated by unnecessary or undue degradation regulations (43 CFR 3809). There are no oil and gas leases in the WSA. Future leases on the 10,480 acres could be issued and developed under leasing Category 2 (open with special stipulations). Continued exploration for locatable minerals is expected. No exploration for oil and gas or other leasable minerals is expected because known resource levels and the probability of their development are too low to support a development assumption (see Appendix 6 in Volume I for details on mineral and energy resources exploration and development projections).

The present domestic livestock grazing use of the 10,480-acre WSA would continue as authorized in the MFP (the estimated 495 Animal Unit Months [AUMs]). The one existing developed spring at the head of Muskrat Canyon could be maintained in a routine manner with motorized equipment.

Future introduction of Rocky Mountain bighorn sheep would be allowed as proposed by the UDWR.

A UDWR proposed transplant of Rocky Mountain elk would not be allowed per existing MFP decisions.

Public water reserves of 120 acres within the WSA would continue to be withdrawn.

NORTH STANSBURY MOUNTAINS WSA

Map 1
LAND STATUS
North Stansbury Mountains WSA
UT-020-089

Legend

- WSA Boundary
- Wasatch National Forest Boundary
- State Land Within or Adjacent to WSA
- Private Land Within or Adjacent to WSA
- Forest Service Administered Land Adjacent to WSA
- BLM Administered Land Within or Adjacent to WSA

N

SCALE IN MILES
0 1 2

SCALE IN KILOMETERS
0 1 2 3

ELEVATION EXPRESSED IN METERS

T. 1 S.

T. 2 S.

R. 7 W.

R. 6 W.

NORTH STANSBURY MOUNTAINS

The 10,480 acres, including about 2 miles of ways in Muskrat and Burnt Canyons, would remain open for vehicular use on a limited basis (depending on the type of vehicle and season of use) in accordance with the Tooele MFP. ORV use in Muskrat Canyon would be seasonally restricted to protect mule deer fawning.

The entire 10,480-acre area would continue to be potentially open to woodland product harvest. There is no harvest of forest products at the present time, nor is any expected because of economic and terrain limitations.

The area would continue to be managed under VRM Class II on 1,440 acres, Class III on 3,840 acres, and Class IV on 5,200 acres.

- Action Scenario

Given the BLM management actions described above and the resources described in the Affected Environment, BLM anticipates that implementation of the No Action/No Wilderness Alternative would result in approximately 2 acres of surface disturbance in the foreseeable future. All of the surface disturbance would result from locatable mineral activities along the eastern border of the WSA (T. 2 S., R. 7 W., secs. 3 and 11). Surface disturbance would occur around existing workings and would also involve the construction of less than a 0.25 mile of road to conduct exploratory drilling. Exploration would be under the unnecessary and undue degradation guidelines of the 43 CFR 3809 regulations and would occur in a VRM Class III area.

Even though locatable mineral development in the short term is not projected, long-term development is possible in the zone of mineralization on the east side of the WSA. The extent and degree of such development is unknown, but could involve new roads, mine portals, surface facilities, etc., mainly in areas that have previously been disturbed.

No other new developments, including rangeland, wildlife habitat, or watershed projects, are anticipated for this WSA in the foreseeable future.

No disturbance from ORV use is projected due to terrain and management constraints.

Recreation use is projected to increase over the current estimated use of 300 annual visitor days annually at a rate of 2 to 7 percent per year. As much as 10 percent of the use involves vehicular access on 2 miles of ways.

- All Wilderness Alternative (Proposed Action)

With this alternative, all 10,480 acres of the North Stansbury Mountains WSA would be designated by an act of Congress as part of the NWPS (refer to Map 2). It would be managed in accordance with the BLM Wilderness Management Policy to preserve its wilderness character (BLM Manual 8560). There are no State, private, or split-estate lands in the WSA. The figures and acreages given for this alternative are for Federal lands only.

- Management Conditions and Constraints

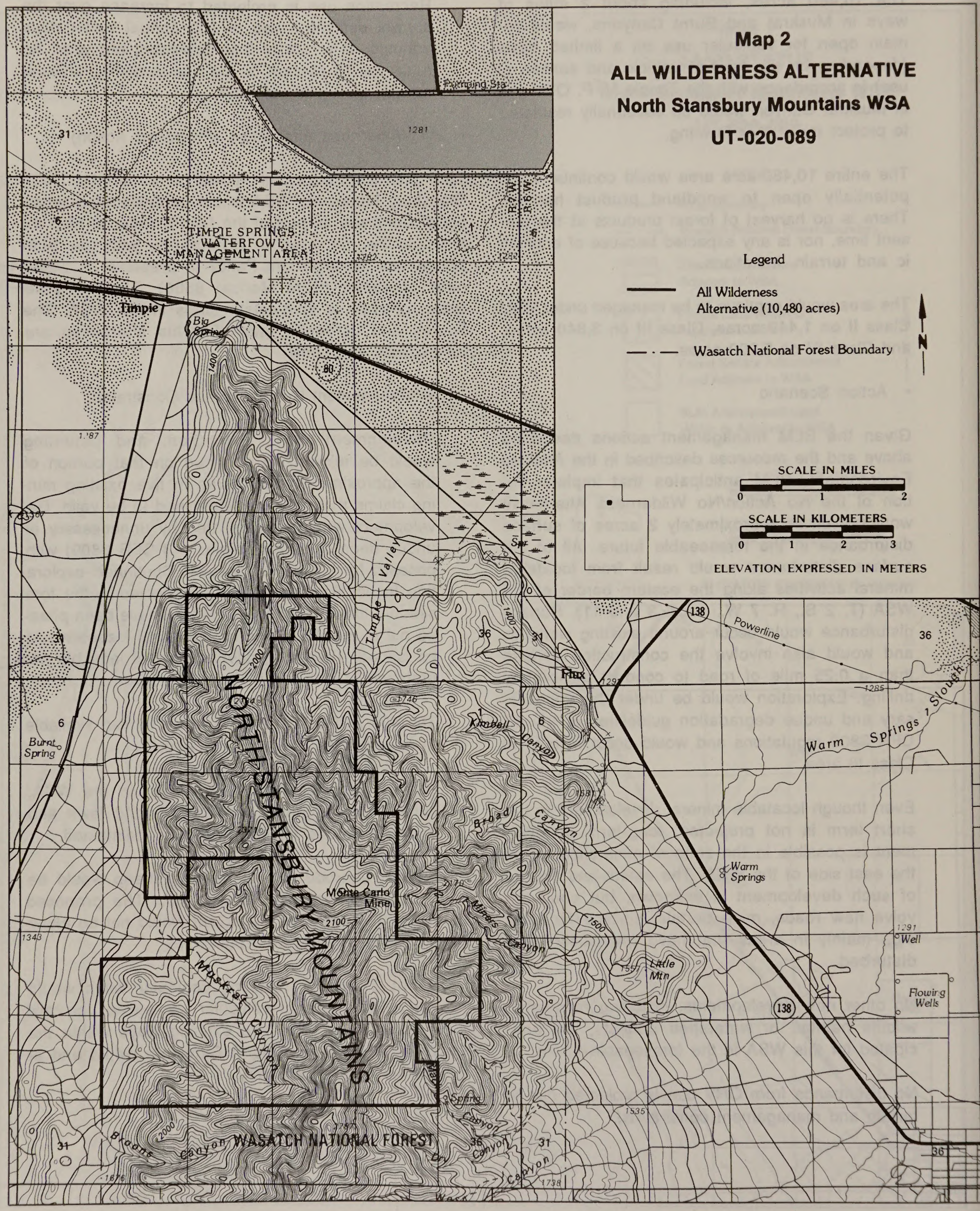
Development work, extraction, and patenting would be allowed to continue on that portion of the approximately 100 acres in five existing mining claims that may be determined to be valid. Development would be regulated by unnecessary or undue degradation guidelines (43 CFR 3809) with concern for wilderness values. Continued exploration for locatable minerals is expected in the foreseeable future. Oil and gas leases have been phased out of the WSA, and no additional leases would be issued. Therefore, development of leasable minerals would not occur after designation.

The 495 AUMs in the WSA would remain available to livestock as presently allotted.

Public water reserves (120 acres) in the WSA, currently segregated from public land laws and nonmetalliferous mining, would be maintained.

Future reintroduction of bighorn sheep would be allowed as proposed by UDWR. The proposed Rocky Mountain elk transplant would not be allowed per an existing MFP decision.

About 2 miles of existing vehicular ways would not be available for vehicular use except for valid existing rights. The two existing ways within the WSA (Muskrat and Burnt Canyons) would end at the wilderness boundary.


Map 2
ALL WILDERNESS ALTERNATIVE
North Stansbury Mountains WSA
UT-020-089
Legend
All Wilderness Alternative (10,480 acres)
Wasatch National Forest Boundary
N
SCALE IN MILES
0 1 2
SCALE IN KILOMETERS
0 1 2 3
ELEVATION EXPRESSED IN METERS
TIMPIE SPRINGS WATERFOWL MANAGEMENT AREA
NORTH STANSBURY MOUNTAINS
WASATCH NATIONAL FOREST
Timpie
Big Spring
Timpie Valley
Burnt Spring
Kimball Canyon
Broad Canyon
Monte Cristo Mine
Miners Canyon
Muskrat Canyon
Broans Canyon
Dry Canyon
Flux
Powerline
Warm Springs Slough
Warm Springs
Well
Little Mtn
Flowing Wells
Pumping Sta
R. 7 W.
R. 6 W.
T. 1 S.
T. 2 S.
6
31
36
1
138

- Action Scenario

It is projected that only 1 acre of surface disturbance would occur in the foreseeable future. This disturbance would result from locatable mineral exploration along the eastern border of the WSA as described in the No Action/No Wilderness Alternative. Exploration would be under the unnecessary and undue degradation guidelines of the 43 CFR 3809 regulations. Disturbed areas would be reclaimed.

Long-term mineral development potential is unknown. However, existing valid claims could be further explored and developed.

No other mineral-related actions, such as mineral leasing or mining claim location, would be allowed. No rangeland, wildlife habitat, or watershed improvements are projected following wilderness designation.

No ORV-related disturbance is projected due to management and terrain constraints.

Recreation use is projected to increase over the current estimated use of 300 annual visitor days at a rate of 2 to 7 percent per year. All use would be primitive in nature.

- Partial Wilderness Alternative

With this alternative, 8,700 acres of the North Stansbury Mountains WSA would be designated as wilderness (refer to Map 3). The objective of this alternative is to avoid designation of areas with the greatest mineral potential. There are no State, private, or split-estate lands involved in the Partial Wilderness Alternative. The figures and acreages given for this alternative are for Federal lands only.

- Management Conditions and Constraints

There are no mining claims in the 8,700-acre area. However, development work, extraction, and patenting would be allowed on any mining claims filed before designation, provided that they are valid. Mineral exploration or development are not expected in the wilderness because the areas of highest known mineral potential are in the nondesignated portion of the WSA. There are no oil and gas leases in the 8,700 acres, and no additional leases would be issued.

In the 1,780-acre area, all five existing claims (100 acres) and future claims could be developed without wilderness consideration. Exploration of locatable minerals is expected. Leasing would be allowed on the area not designated and would be managed as oil and gas leasing Category 2 (standard and special deer fawning stipulations) on either 480 or 1,780 acres. Even though minerals leasing would be allowed in this area, known resource levels and their probability of development are too low to support a development assumption.

The 495 AUMs in the 8,700-acre area would remain available to livestock as presently allotted. The existing developed spring could be used and maintained as in the past based on practical necessity and reasonableness.

Public water reserves of 120 acres would not be in the designated portion of the WSA and would continue under withdrawal.

Transplanting of bighorn sheep into the area has been proposed and would be allowed under this alternative. However, transplants of Rocky Mountain elk would not be allowed in either the designated or nondesignated area per ongoing Tooele MFP decisions.

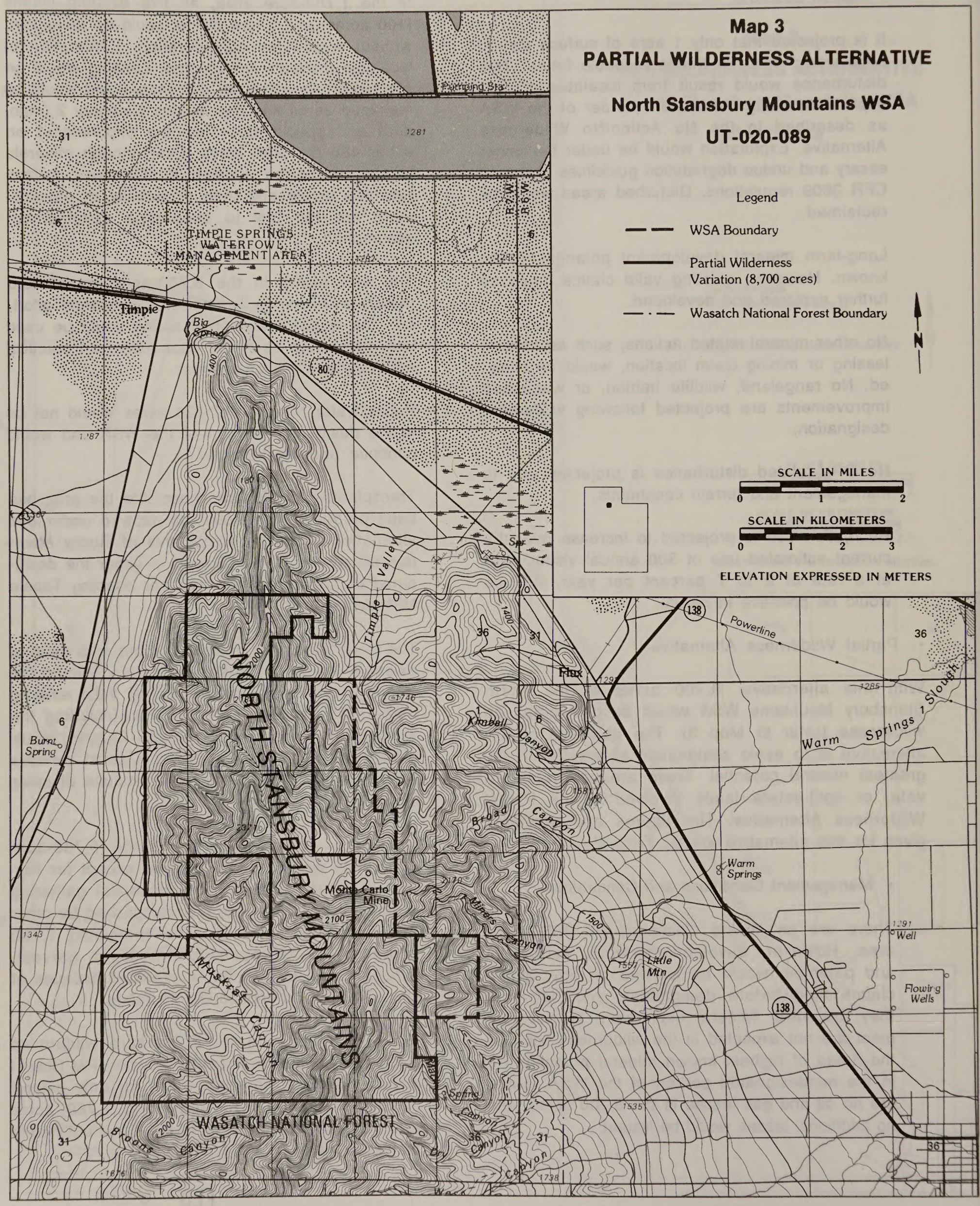
The designated area, including about 1.75 miles of existing ways in Muskrat Canyon, would be closed to vehicular use except for valid existing rights. The remainder of the unit, including the existing 0.25 mile of way in Burnt Canyon, would remain open to vehicular travel. Use of vehicles would be restricted to this way because of steep slopes.

Harvest of forest products in the 8,700-acre wilderness would not be allowed except for harvest of pinyon nuts or noncommercial gathering of dead-and-down wood, if accomplished by other than mechanical means. The remaining 1,780 acres would be open to woodland harvest, although none is planned or expected because of steep slopes and economic constraints.

Visual resources on the 8,700-acre wilderness would be managed in accordance with VRM Class I standards, which generally allow for only natural ecological change. The remaining 1,780 acres would be managed as VRM Class III, as outlined in the Tooele MFP.

FEB 9 1993
Bureau of Reclamation
Denver Office

NORTH STANSBURY MOUNTAINS WSA



- Action Scenario

BLM anticipates that in the short term, 2 acres of surface disturbance, including 0.25 mile of road, would result in the nondesignated portion of the WSA from continued locatable mining exploration and development along the east border as described in the No Action/No Wilderness Alternative.

The mining activities would be under the unnecessary and undue degradation guidelines of the 43 CFR 3809 regulations. The exploration road would likely remain in place, but other disturbance would be reclaimed. No other developments, including rangeland, wildlife habitat, or watershed projects, are anticipated in the foreseeable future.

The nondesignated portion of the WSA would remain open to mineral location and mineral leasing (Category 2, open to surface occupancy with special stipulations). Therefore, mineral resource exploration and development could occur in the long term. The degree of development is unknown but would likely occur in areas previously disturbed by mineral activities.

No disturbance is anticipated from ORV activity due to management and terrain constraints.

Recreation use is projected to increase above the current estimated use of 300 annual visitor days at a rate of 2 to 7 percent per year. As much as 10 percent of the use would involve vehicular access on the 0.25 mile of way that would remain open for vehicle use.

Summary of Environmental Consequences

Table 1 summarizes environmental consequences of alternatives analyzed in detail.

AFFECTED ENVIRONMENT

This section describes the overall environmental setting. This information allows for independent assessment by the public as required by the Council on Environmental Quality (CEQ) guidelines and provides a data base for the cumulative Statewide analysis found in Volume I, as well as for the Environmental Consequences of Alternatives section of this WSA analysis.

Unless indicated otherwise, information for this section was taken from BLM staff specialists, technical reports, and file documents.

Wilderness Values

- Size

This WSA consists of 10,480 acres at the northern end of the 30-mile-long Stansbury Mountain Range. It is basically triangular in shape, approximately 6 miles long and 3 miles wide. Elevation varies from 8,800 feet in the south on the National Forest boundary to 5,200 feet along the base of the unit (a 3,600-foot difference).

- Naturalness

As described in the BLM Intensive Wilderness Inventory, this WSA is basically a natural area (USDI, BLM, 1980a). There are no signs that man has spent time in the interior of the unit. The only intrusions consist of a mining road, adit, shaft, and 2 miles of ways which enter lower portions of Burnt and Muskrat Canyons. These intrusions were found to be substantially unnoticeable. About 10,280 acres meet the Wilderness Act standards for naturalness and 200 acres do not meet the standards. No surface-disturbing activities have occurred since the wilderness inventory.

- Solitude

Rising from the Salt Desert as a north-south trending mountain ridge, the WSA has been cut and shaped by north, east, and west drainage systems. Both topography and vegetative screening exist in scattered locations. The ridgeline of the WSA is flanked by steep, sparsely vegetated slopes which are separated by rugged canyons. North exposures of the canyons have a conifer or mixed conifer-riparian woodland that provides a feeling of isolation or seclusion. Outstanding opportunities for solitude are found among the forested, rocky chutes that lead from Muskrat Canyon to the slopes west of Onaqui Peak; in the canyons to the south end of Timpie Valley and Mack Canyons; and in areas along the ridgeline, where aspen, mountain mahogany, and Douglas fir offer seclusion.

Outstanding opportunities for solitude are present throughout the majority of the unit (about 5,810 acres). There are, however, areas within the WSA (about 4,670 acres) that are conspicuously open and unscreened by vegetative or topographic cover.

NORTH STANSBURY WSA

Table 1
Summary of Environmental Consequences

Resource	Alternatives		
	No Action/No Wilderness	All Wilderness (10,480 Acres) (Proposed Action)	Partial Wilderness (8,700 Acres)
Impacts on Wilderness Values	Wilderness values would not be protected by wilderness designation and loss would occur as intrusions increase. In the foreseeable future, naturalness and opportunities for primitive recreation would be directly lost on 2 acres and opportunities for solitude and primitive recreation would be indirectly reduced in quality on 1,500 to 3,000 acres due to mineral exploration. Continued vehicular use of 2 miles of ways would detract from opportunities for solitude and primitive recreation. Special features would not be significantly affected.	Wilderness values would be preserved overall throughout the WSA. In the foreseeable future, naturalness and opportunities for solitude and primitive recreation would be directly lost on 1 acre and opportunities for solitude and primitive recreation would be indirectly reduced in quality on 1,500 acres due to mineral exploration. Special features would be preserved.	Wilderness values would be preserved in the designated area which is about 83 percent of the WSA. In the foreseeable future, naturalness and opportunities for solitude and primitive recreation would be directly lost on 2 acres and opportunities for solitude and primitive recreation would be indirectly reduced in quality on 1,500 to 3,000 acres due to mineral exploration. Special features would be preserved. Continued vehicular use of 0.25 mile of way would detract from opportunities for solitude and primitive recreation.
Impacts on Mineral and Energy Exploration and Production	Mineral and energy exploration or development would not be adversely affected. The WSA would be open to exploration and development of mineral and energy resources.	Wilderness designation would eliminate or severely constrain exploration and potential production for locatable minerals. Loss of development opportunities would not be significant.	This alternative would not adversely affect mineral and energy exploration and development.
Impacts on Livestock Management	Livestock grazing would not be affected.	Vehicular restrictions on 2 miles of way could inconvenience six livestock operators in the area. Losses of livestock due to predators would increase slightly. The overall effect on methods and costs of livestock management would be negligible.	Effects would be approximately the same as with the All Wilderness Alternative.

NORTH STANSBURY MOUNTAINS

The Stansbury Mountains are within the South Range of the USAF's Utah Test and Training Range. The South Range runs approximately north to south from the southern boundary of the Bonneville Salt Flats to the San Francisco Mountains and east to west from the Sheeprock Mountains to 17 miles within Nevada. This is one of the Nation's busiest military air spaces. There are 15,000 aircraft including all types of tactical fighters and bombers in the area. There are 100 to 150 (conservative estimate) aircraft flights per day over the area 6 days per week. Flights occur as low as 100 feet above the ground surface. Speeds are subsonic except in the very northern portion of the test range in the area around Ibapah, where supersonic speeds are also reached. Heaviest use areas are in the northern part of the test range which includes the North Stansbury Mountains WSA (Davies, 1985). Aircraft occasionally fly directly over the WSA, and these overflights can be a source of annoyance to visitors seeking solitude. However, since most of these overflights are usually not directly over the North Stansbury Mountains WSA and are subsonic in this area, they are not considered a significant off-site (sight and sound) intrusion.

- Primitive and Unconfined Recreation

The North Stansbury Mountains WSA offers outstanding opportunities for hiking, horseback riding, and sightseeing. Although most current use is related to hunting, the other most popular recreation use is dayhiking along the ridgeline to the summit. Backpacking, if not now occurring, is a possibility. A combined BLM/National Forest Stansbury Mountain adventure awaits those who can walk the 30-mile range from Timpie on the north to Johnsons Pass on the south. No trail now connects these two points. Access to the WSA is limited by adjacent private lands. The WSA can be accessed from Muskrat Canyon on the west and the FS lands on the south. Adjacent Forest Service (FS) lands involving 3,500 acres that link the BLM WSA to the north with the FS wilderness to the South are currently being merged as a semi-primitive nonmotorized area until Congress decides on wilderness designation or nondesignation for the WSA. Including the 3,500 acres of FS land as part of a larger wilderness boundary that connects both the current wilderness and WSA would enhance primitive recreation opportunities available in the North Stansbury Mountains.

Horseback riding is possible on the central portion of the area. Riders might meet with some difficulty in the extreme north along the narrow Timpie Ridge and in the south above Mack Canyon, but the meadows that mantle the north and south ridge above Miners Canyon offer relatively gentle slopes and, if approached through Miners or Muskrat Canyons, easy horseback access. Hunting on foot or horseback is a popular activity in the WSA.

The unit is primarily a single promontory from which a myriad of scenic vistas are possible. The unit contains a spectrum of at least three growth or life zones. Scenic vistas on all sides and unique views of the Great Salt Lake to the north are offered from the Stansbury Mountains.

Opportunities for primitive recreation were judged outstanding on 5,760 acres of the WSA and less than outstanding in the remainder of the area (4,240 acres).

- Special Features

The WSA has resource values that, although not identified as such during the wilderness inventory, could be considered special features. There are two animal species (bald eagle and peregrine falcon) listed as endangered or threatened. Nine other special status animal species could occur in the WSA. Refer to the Vegetation and Wildlife Including Special Status Species sections for additional information. The WSA has populations of cougar and the UDWR has proposed transplanting Rocky Mountain bighorn sheep into the WSA. Both are wildlife species associated with wilderness. Approximately 12 percent (1,300 acres) of the WSA is rated Class A for scenic quality, and the WSA has a known cultural site eligible for listing on the National Register of Historic Places.

- Diversity

This WSA is in the Intermountain Sagebrush Province Ecoregion and has the potential natural vegetation (PNV) types of juniper-pinyon woodland and spruce, fir, and Douglas fir forest. Refer to the Vegetation Including Special Status Species section for more discussion on ecoregions and PNV types. To see how the ecoregion and PNV types represented by this WSA compare Statewide and nationally with existing and potential National Wilderness Preservation Units, refer to the Wilderness Values section in Chapter 3 in Volume I.

This WSA is within a 5-hour drive from two standard metropolitan statistical areas. These are Salt Lake City-Ogden, Utah, and Provo-Orem, Utah.

NORTH STANSBURY MOUNTAINS

Air Quality

This WSA is located in a PSD Class II area under the provisions of the Clean Air Act as amended. Visual range averages about 30 to 50 miles during the summer.

Pollutant sources are threefold. Locally, a cement processing plant, located 3 miles east of the WSA's eastern boundary, produces an abundance of limestone dust. Regionally, air quality is affected by mineral extraction plants along the south end of the Great Salt Lake. Perhaps the majority of pollutants originate from the Wasatch Front, 40 miles to the east, which is an air quality nonattainment area. The nearest Class I area is the Jarbridge Wilderness approximately 150 miles to the northwest in Nevada.

Geology and Topography

The North Stansbury Mountains WSA is situated on the northern end of the Stansbury Mountain Range, in the Basin and Range Physiographic Province. The range is 30 miles long and 10 miles wide and is typical of this province in that it is a north-south trending range formed by east-west tensional forces. Folds, reverse faults, and normal faults typify the range.

Having an elevation of 11,031 feet at the highest peak (outside of the WSA), the range contains over 27,000 feet of Paleozoic rocks, representing every Paleozoic period except Permian. Rock types are primarily resistant carbonates and quartzites forming steep ridges and cliffs. The Stansbury Mountains also contain Tertiary volcanics, primarily basalt and latite. Within the WSA, there are some small basalt flows and a very small monzonite dike. The range is a doubly plunging anticline bounded on the west by a series of normal faults and on the east by a reverse fault.

Within the WSA, elevation ranges from 5,200 to 8,800 feet. The west side is very steep and rugged while the east side is slightly less rugged. Drainages are steep as they plunge from the ridge to the valley floor. Landform is considered interesting.

Soils

This WSA is composed of three soil associations (USDI, BLM, 1982a). They are, in order of importance in the unit:

1. Lithic Xerollic Calciorthids-Lithic Calcixerolls-Rock Outcrop (80 percent of the WSA). This unit consists of well drained, steep to very steep foothills and mountain slopes, and shallow, very gravelly loam to very cobbly loam. The surface is covered with 30 to 80 percent rock fragments. About 20 percent of this area is rock outcrop.

2. Pachic Cryoborolls-Pachic Cryoborolls North-Pacific Haploborolls (10 percent of the WSA). This unit consists of rolling hills and mountains with steep to extremely steep slopes, and shallow to very deep soils underlain with dolomite, limestone, and sandstone bedrock ranging in depth from 10 to 16 inches.

3. Typic Argixerolls-Calic Argixerolls-Typic Calcixerolls (10 percent of the WSA). This unit occurs on steep to extremely steep mountain slopes, and it consists of cobbly loam to very gravelly clay loam and silty clay loam moderately deep to very deep well drained soils underlain with unweathered bedrock at 31 inches.

Table 2 shows soil erosion conditions throughout the WSA.

Table 2
Erosion Condition

Classification	Annual Soil Loss (cubic yards/acre)	Acres	Percent of WSA	Total Annual Soil Loss (cubic yards)
Severe	5.4	838	8	4,525
Critical	2.7	1,363	13	3,680
Moderate	1.3	2,620	25	3,406
Slight	0.6	3,773	36	2,264
Stable	0.3	1,886	18	565
Total		10,480	100	14,441

Sources: BLM File Data; Leifeste, 1978.

Rehabilitation potential is limited because of slope and climatic factors.

Vegetation Including Special Status Species

The North Stansbury Mountains WSA is vegetatively typical of the isolated desert mountain ranges scattered across the Basin and Range Physiographic Province.

In the lower elevations, vegetation is dominated by the juniper woodland (no pinyon pine exists in the WSA). This juniper woodland is common to the entire unit on dry, rocky, exposed slopes under 7,500 feet elevation. Sagebrush is often a common understory

species in the juniper woodland as well as a common filler on open slopes, especially on southern aspects and in the exposed upper gullies extending into the montane zones.

In the transition from juniper to conifer vegetation, mountain mahogany dominates. Other recorded subalpine shrub species include currant, bitterbrush, chokecherry, serviceberry, ninebark, and mountain snowberry.

From 7,400 to 8,800 feet, the mountaintop, ridgelines, and open mountain meadows in the WSA are vegetated by submontane shrubs, aspen, conifers, and grasses mixed with sagebrush. The montane conifer forest is most evident on the north-facing slopes and in the drainage bottoms. Stands of mixed Douglas and white fir, along with limited riparian and canyon floor woodland communities, dominate the north side of Timpie and Mack Canyons and separate exposed walls of quartzite above Muskrat Canyon. An additional stand of Douglas fir is located in the upper southwest side of the unit, near the National Forest boundary.

Riparian vegetation totals about 25 acres or less than 1 percent of the WSA (USDI, BLM, 1982a). The dominant riparian species are narrowleaf cottonwood, aspen, and chokecherry. This vegetation type is found in a few locations along intermittent stream courses or near high water tables associated with canyon and alluvial fan outwash. Existing vegetation by acreage is shown in Table 3.

Table 3
Existing Vegetation Types

Existing Vegetation Type	Acres	Percent of WSA
Juniper	5,760	5
Coniferous Forest/Aspen	660	6
Riparian	25	1
Shrubs, grasses, forbs	3,345	32
Barren (rock outcrop, badlands)	690	6
Total	10,480	100

Source: USDI, BLM, 1982a

No threatened, endangered, or other special status plant species are known to occur in the WSA (Welsh, 1979; refer to Appendix 4 in Volume I for details).

The North Stansbury Mountains WSA is in the Intermountain Sagebrush Province Ecoregion as shown on the Bailey-Kuchler ecosystems map (USDI, USGS, 1978). PNV types of the WSA are listed on Table 4 (see Glossary in Volume I).

Table 4
Potential Natural Vegetation Types

PNV Type	Acres	Percent of WSA
Spruce, fir, Douglas fir	700	7
Juniper-pinyon woodland	9,780	93
Total	10,480	100

Source: USDI, USGS, 1978.

Water Resources

Perennial springs and streams are absent in the North Stansbury Mountains WSA. All but one water source found in the WSA consists of intermittent streams that carry snowmelt and thunderstorm runoff during the spring and summer months. Snow cover and ridgeline cornices generally melt and disappear by early July. All streambeds are dry by mid-June.

The only other water resource is a single, intermittent seep (Muskrat Spring) that generally flows throughout the month of June and long after all other water sources in the WSA are dry. This seep, located high in the Tintic quartzite cliffs on the west side of the mountain, yields approximately 5 gallons of water per hour, or enough to maintain a constant water level in a 15-foot water trough located in the upper end of Muskrat Canyon. This trough and the 0.5 mile of 1-inch plastic pipe constitutes the only water development in the WSA. Water rights have not been filed for the seep mentioned above.

Irrigation or domestic use of the existing water resource is nonexistent. Potential well development is better suited to alluvial fans located below the WSA boundaries. Although data are not available, groundwater within the WSA apparently is good, as evidenced by the quality of the existing seep, the nature of the geologic materials, and the undisturbed conditions. The seep has not been classified for beneficial use by the State of Utah; therefore, BLM applies the State's criteria for Class 4 which protects water quality for livestock watering.

Mineral and Energy Resources

Table 5 gives the mineral and energy resource summary ratings for the WSA. Refer to Appendix 5 in Volume I for a detailed description of the rating system (SAI, 1982).

Table 5
Mineral and Energy Resource Rating Summary

Resource	Rating: Favorability[a]	Rating: Certainty[b]	Estimated Resource
Oil and Gas	f 2	c1	Less than 10 million barrels of oil; less than 60 billion cubic feet of gas
Uranium	f 2	c1	Less than 500 metric tons of uranium oxide
Geothermal	f 2	c2	Low temperature resource
Gold	f 2	c2	Less than 100,000 troy oz.
Silver	f 2	c2	Less than 500,000 troy oz.
Copper	f 3	c2	50,000 to 1 million metric tons
Lead/Zinc	f 2	c3	Less than 50,000 metric tons

Source: SAI, 1982; USDI, BLM 1987d.

[a]Favorability of the WSA's geologic environment for a resource (f1 = lowest favorability or smallest size deposit; f4 = highest favorability or largest size deposit).

[b]The degree of certainty that the resource does or does not exist within the WSA (c1 = lowest and c4 = highest).

The WSA could contain deposits of lead, zinc, silver, and copper that are currently listed as strategic and critical materials (USDoD, 1988). Although listed as strategic, copper is relatively common. Supplies currently exceed domestic demand.

- Leasable Minerals

Based on geologic data and characteristics, the only potentially leasable minerals are oil, gas, and geothermal resources (SAI, 1982). There is no active exploration or drilling for leasable minerals nor has there been any drilling in the past.

- Oil and Gas

The favorability for oil and gas occurrence in this WSA has been rated as f2. This determination is based on geology of the area and history of exploration.

Due to the mechanics of formation of the Stansbury Mountains (i.e., faulting and the presence of a small amount of igneous rocks), any traps or reservoir rocks may have been destroyed. If this is the case, the chance for hydrocarbon entrapment would be low with a potential only for small, widely scattered oil and gas pools. The size of recoverable hydrocarbon accumulations in such an environment is anticipated to be less than 10 million barrels of oil or less than 60 billion cubic feet of gas.

All 10,480 acres are in oil and gas Category 2 (open to leasing with special stipulations). There are no existing oil and gas leases in this WSA.

- Geothermal Resources

There are no geothermal leases in this WSA. The favorability for geothermal resources in the North Stansbury Mountains WSA has been rated as f2, potential for low temperature resources. This was determined by thermal wells and springs in the vicinity, and information published in the USGS Open File Report No. 77-602 (SAI, 1982). The well data were published on a 1980 map by Utah Geological and Mineral Survey (SAI, 1982). The Utah Geological and Mineral Survey publication showed that all thermal wells and springs in the vicinity (none are located in the WSA) have a temperature of less than 27 degrees Centigrade (C). This information was used to establish a low (c2) degree of certainty.

- Locatable Minerals

The North Stansbury Mountains WSA is within the Free Coinage Mining District (organized in 1895). It covers a single zone of mineralization that lies along the east side of the WSA. There are numerous small prospects and abandoned shafts and adits. From 1917 to 1948, the Free Coinage Mining District produced over 400,000 lb of lead, 5,000 lb of zinc, 6,000 oz of silver, 5 oz of gold, and over 1,000 lb of copper (USDI, USBM, 1987b). The District has two known deposits within or overlapping the WSA boundary. A brief description of each follows.

1. Monte Carlo Mine (T. 2 S., R. 7 W., sec. 14): The Monte Carlo Mine is located in Miners Canyon in the Lower Gardner Dolomite. The primary minerals present include galena, cerussite, calcite, plumbojarosite and limonite. The ore is galena embedded in an oxidized groundmass of limonitic quartz and cut with secondary calcite veinlets. The mine entrance is immediately adjacent to, but outside of, the WSA. Some of the lead ore shipped contained 35 to 40 percent lead (Buranek, 1942). The mine is presently inactive. A recent assay (Perry and McCarthy, 1977) had the following results: lead 1.84 percent, zinc 0.46 percent, copper 0.0006 percent, gold 0.003 oz per ton, and silver 0.07 oz per ton. Most of the silver, lead, and zinc produced in the Free Coinage Mining District was from the Monte Carlo Mine (USDI, USBM, 1980).

2. Lead Queen Claims (T. 2 S., R. 7 W., sec. 24): The Lead Queen deposit is located on the south side of Miners Canyon in the Gardner Dolomite. The primary metals mined are lead, zinc, and silver (Messenger, 1980). The first test ore from this deposit was shipped to the smelter in 1943 (USDI, USBM, 1980). The present claims were located in 1949, and they have been maintained since that date. Most of the claims and all of the major workings are within the North Stansbury Mountains WSA boundary. No assays or production records are available.

There are two claim groups containing a total of five unpatented mining claims (100 acres) within or overlapping the North Stansbury Mountains WSA. These claims are on the east side of the WSA and are all pre-FLPMA. The Lead Queen Claim Numbers 1 through 4 were located in 1949. Amended location notices were filed in 1979 but, since the boundaries of the claims were not changed, their rights remain tied to the original date of location. Minor development work has been ongoing since well before 1976, so these four claims have grandfathered rights.

- Uranium

The favorability is f2, with an estimate that up to 500 tons of uranium oxide potentially could be contained within the WSA; however, this estimate has a very low degree of certainty. There are no known surface or subsurface deposits in the WSA.

- Copper

On the basis of available information and favorable geology similar to the Bingham/Mercury mining districts, the WSA has been assigned a favorability of f3 for a geologic environment favorable for copper deposits containing 50 thousand to 1 million metric tons of contained metal. This rating is based chiefly on the tract's position within a recognized mineral belt and the potential of an intrusive body at depth. The certainty that copper resources exist is low (c2), but copper is known to exist in areas to the north (SAI, 1982).

- Silver

The geologic environment deemed favorable for silver is part of the same favorable environment described above for copper. Therefore, the favorability for silver is less than 500,000 troy oz of contained metal. It is expected that any silver deposits that may exist in this WSA are generally small and scattered. At least one prospect, rock assay, or deposit is known to have shown a positive silver indication in the WSA. The certainty that silver occurrences exist is low, and the WSA has been assigned a c2 value on the basis of the known occurrence.

- Gold

Gold deposits in Utah are closely associated with favorable environments for copper, lead, zinc, and silver. Based on the geologic favorability described above, the known associated indicator minerals, and the mineral models of similar geologic settings in Nevada and Utah, the geologic favorability for gold has been rated f2 for small disseminated deposits with a low degree of certainty (c2) (USDI, USGS, 1985, 1986b; Wilkins, 1984). The Tertiary volcanics in relation to the carbonate-host rocks, thrust faults, and high angle faults are similar to those described in the Mercury disseminated gold deposit. Known indicator minerals include calcite, cerussite, mercury, limonite, arsenic, antimony, copper, and barite.

- Lead and Zinc

The geologic environment for lead and zinc is as described for silver, copper, and gold. Since there has been known production of lead and zinc within or near the WSA (see previous discussion on Monte Carlo Mine), the geologic favorability has been rated f2 for small deposits of less than 50,000 metric tons of contained metal with a moderate degree of certainty (c3).

- Salable Minerals

Salable mineral materials within the WSA are low quality and consist mainly of riprap-type material located in talus slopes. There are no established material sites within the WSA. The potential for the use of the salable minerals is low because of the widespread occurrence of higher quality material that is easier to obtain.

Wildlife Including Special Status Species

There are approximately 180 species of wildlife in the North Stansbury Mountains WSA. Of these, there are 114 species of birds, 51 species of mammals, and 15 species of reptiles (USDI, BLM, 1982a).

Of the 180 species referred to above, 10 are considered game species (Sparks, 1981). The only migratory game bird is the mourning dove. Small game species include blue grouse, sage grouse, chukar partridge, mountain cottontail, desert cottontail, and pygmy cottontail. The cougar is considered a small game species by the State of Utah and can be found in the area. The only big game species in the WSA is the mule deer.

There are approximately 2,560 acres of crucial summer mule deer range within the WSA, including 1,780 acres identified as crucial fawning grounds (USDI, BLM, 1984c). This represents about 4 percent of the crucial summer range in the Stansbury Deer Herd Unit. It is estimated that the crucial range within the WSA provides habitat for about 524 deer (Buffa, 1983a). The entire Stansbury Deer Herd Unit supports an estimated 13,400 deer (USDI, BLM, 1982a).

Several species of furbearers occur within the WSA, the bobcat being the only game species (Sparks, 1981).

Seventeen raptor species use the WSA either for hunting or for nesting activities (USDI, BLM, 1982a). The golden eagle, a sensitive species, nests in the area and is considered a yearlong resident (Benton, 1982). Most of the area inside the WSA is considered crucial yearlong habitat for the sensitive golden eagle. This indicates that golden eagles may nest inside the WSA.

The only endangered species of wildlife known to occur in the North Stansbury Mountains WSA is the bald eagle. However, there is no Federally designated critical habitat for this species within the WSA.

The peregrine falcon could also visit the WSA. Eight Category 2 candidate species could occur in the WSA. These are the ferruginous hawk, long-billed curlew, Swainson's hawk, western snowy plover, white-faced ibis, western yellow-billed cuckoo, spotted bat, and the Stansbury pocket gopher. With the exception of the spotted bat and Stansbury pocket gopher, these species are birds that frequent areas throughout the Great Basin and other parts of the western United States. Refer to Appendix 4 in Volume I for details.
UDWR has proposed transplants of two big game species on the Stansbury Mountains. These are the Rocky Mountain bighorn sheep and the Rocky Mountain elk. The current BLM Tooele MFP does not provide for elk in this area, although it does allow habitat for bighorn sheep (USDI, BLM, 1984c). There are no vegetation habitat manipulation projects for wildlife planned for the WSA and potential for such projects is low. There are no wildlife management facilities located in the WSA.

Forest Resources

The conifer forest in the North Stansbury Mountains WSA consists of approximately 660 acres of noncommercial forest lands. All 660 acres are forest with a Douglas fir or a Douglas fir/white fir mix that occurs almost exclusively in 60- to 100-acre stands on the steep, north-facing slopes and draws of Timpie, Mac's, Miners, and Muskrat Canyons. None of the coniferous forest could be logged at a profit. All stands are high on the mountain between 7,000 to 8,800 feet, in terrain inaccessible by roads or ways. All conifer species in the North Stansbury Mountains WSA are more valuable for ground cover and erosion control rather than as a possible source for timber products.

The 5,760 acres of juniper forest within the WSA are light stands estimated at 25 percent or less crown density. Past and present use has been restricted by the rugged terrain and more accessible juniper resources on adjacent lands. There is no present or foreseeable use or benefit to be gained from an individual or commercial juniper cutting operation inside the WSA.

Livestock and Wild Horses/Burros

Six ranching operators use the North Stansbury Mountains WSA for a total of 495 AUMs. The North Stansbury Mountains contain portions of four allotments. Table 6 shows livestock-related information for these allotments.

In the Lone Rock and Salt Mountain Allotments, the three operators graze cattle along the slopes of the North Stansbury Mountains WSA. Seasonal use occurs in the spring, fall, and winter months. Within this 41,600-acre combined area of these allotments, 4,140 acres containing an estimated 155 AUMs are located on the slopes of the North Stansbury Mountains WSA.

In the Timpie-Northwest Grantsville Allotment, two operators graze cattle and sheep on 1,410 acres (35.88 percent of the total allotment) located along the north and east facing slopes of Timpie Canyon. Seasonal use takes place from November through June. Within this 3,930-acre allotment, 1,410 acres comprised of 75 AUMs are located along the north and

Table 6
Livestock Grazing Use Data

Allotments	Total Acres	Acres in WSA	Total AUMs	Number of AUMs in WSA	Number and Kind of Livestock	Season of Use	Number of Operators
Lone Rock	24,960	2,540	250	95	42 Cattle	11/01-04/30	1
Salt Mountain	16,640	1,600	842	60	817 Cattle	05/01-06/15	2
Stansbury Mountain	5,830	4,930	625	265	90 Cattle 7 Horses	05/15-08/11	1
Timpie NW Grantsville	3,930	1,410	417	75	1,800 Cattle 70 Sheep	11/01-04/30 05/01-06/10	2
Totals	51,360	10,480	2,134	425			6

Sources: BLM File Data.

east facing slopes of Timpie Canyon, or that area making up the northeastern boundary of the WSA.

The WSA has not been used for base camps and, due to limited access (2 miles of ways), salt and water are not distributed through the area with motorized vehicles. There are sheep operations on private lands contiguous to the eastern boundary of the WSA.

In the Stansbury Mountain Allotment, a single rancher grazes cattle and horses on 4,950 acres (84.90 percent of the total allotment). Seasonal use takes place in the summer between June 15 and August 15. Within this 5,830-acre allotment, 4,930 acres consisting of 265 AUMs are located across the top and down the east side of the WSA.

Unsuitable grazing land makes up a part of all three allotments. Land classified as unsuitable is primarily the steep, poorly vegetated uplands and rocky southern slopes that lack water in the hot summer months and lack access in the snowbound winter months. The only range development located in the WSA is a spring or seep development site high in the cliffs above Muskrat Canyon, as noted in the Water Resources section. A way, 1.75 miles in length and passable to four-wheel drive vehicles, is used to gain access to the trough site. There are no other livestock management facilities or stock trails, routes, routines, and/or grazing systems in the WSA.

There are no wild horses or burros, nor is there Federally designated habitat for these species within this WSA (USDI, BLM, 1982a).

APHIS conducts predator control in the BLM grazing allotments that comprise the WSA. According to APHIS records, a total of 47 coyotes were taken in the allotments in and surrounding the WSA during 1986 and 1987 (USDA, APHIS 1988). Forty-three were taken from aircraft, two by calling, and two by steel trap. The WSA comprises between 9 and 85 percent of the area of any one allotment. It is not known what proportion of the coyotes were actually taken within the WSA. The combined, confirmed livestock losses for 1986 and 1987 in these allotments were three sheep. An unrecorded number of additional losses were reported by livestock operators.

Visual Resources

The North Stansbury Mountains WSA has moderate to high quality scenery. The topography is primarily rounded and angular, though steep mountain slopes with many rock outcrops exist along the mountain's single crest and the western flank.

The lower elevation plant community is desert shrub trending into juniper, mountain mahogany, and conifer at the higher elevations, with aspen clumps in some canyons and upper meadows. There are few riparian zones.

The higher elevations of the WSA (mostly areas having high quality Class A scenery) are rated VRM Class II, the lower elevations are Class III on the east side, and Class IV on the west side. Acreages and percentages are indicated in Table 7. Refer to Appendix 7 in Volume I for a definition of VRM terms.

Table 7
Visual Resource Quality and Management Class

Element		Acres	Percent of WSA
Scenic Quality Class A		1,300	12
Scenic Quality Class B		9,180	88
Scenic Quality Class C		0	0
	Total	10,480	100
Management Class I		0	0
Management Class II		1,440	14
Management Class III		3,840	37
Management Class IV		5,200	49
	Total	10,480	100

Source: USDI, BLM, 1982a.

Cultural Resources

As of 1988, BLM cultural resource site maps indicate that two small surveys have been completed within the WSA boundary (USDI, BLM, 1988). The area of both surveys, at an elevation of 7,800 to 8,000 feet, is relatively open with black sagebrush, beavertail cactus, scattered mountain mahogany, and juniper.

The first survey, conducted in June 1980, was a quarter-section located near the summit of the range. This area was intensively surveyed as part of the 1 percent random sampling for the Skull Valley/Lakeside Planning Area. Two sites were found in this survey. One site is a discrete lithic scatter, probably being a tool manufacture station related to hunting. There are numerous flakes, one biface basal fragment, and a few long, thin utilized flakes which have been retouched (all of red jasper). This is the only known site eligible for nomination to the National Register of Historic Places. It is representative of high elevation sites that have been found in the Great Basin. It is significant because little is known of what part high elevation sites played in settlement and subsistence patterns during the Archaic and Fremont periods. Also, this site spans both of these periods. Further study and comparison with other high elevation sites will improve understanding of subsistence patterns and perhaps support or refute concepts of intersite variation among hunters and gatherers. Recent finds in other areas point to the possible importance of these high-elevation sites in subsistence patterns, even though they have not yet been seriously studied.

The second site is another lithic scatter located 0.25 mile west of the first site. It is judged to be a tool retouch area and is hunting related. Two isolated points found between the two sites tentatively date as Archaic/Fremont and Shoshoni.

The second survey was conducted in September 1981 to provide clearance for seismic testing. It was a linear survey (east to west) 0.50 mile in length, crossing within 0.25 mile of the first survey. No cultural resources were found.

Two other sites have been found at 5,000 feet on the west slope: one site on the boundary of the WSA and the second just outside the boundary. The first of these is a rock shelter that has been extensively disturbed by pot hunters. The cultural affiliation is unknown. Remains found at the site included burned bone, charcoal, a large flake of quartzite, a metate, a mano, and a scraper of white chert. The second site is a limestone cave that has also been heavily pot hunted. This site is affiliated with the Archaic period, based on an unfinished Gypsum point found near the cave entrance. Other remains consist of burned bones and fire-cracked rock. Both of these sites are considered significant due to the scarcity of such sites found in Tooele County and because the remaining undisturbed areas within the sites could provide information related to Great Basin aboriginal subsistence patterns.

There is a high probability that undiscovered significant sites could exist in the WSA, with the most sensitive areas being the mountaintops, flat ridges, and saddle areas.

Recreation

Recreation use in this WSA has not been sampled or documented to support estimates of recreation use or activity preferences in the North Stansbury Mountains. BLM personnel have been in the field to review evidence of recreational use such as fire rings. BLM personnel estimate that recreational use in the area primarily occurs on the first weekend of the deer hunt and the opening day of the upland game bird season. About 95 percent of the use is related to hunting. Throughout the rest of the year, few people (5 percent of the use) venture into the area, mostly for dayhiking. An estimated 300 visitor days per year (90 percent primitive and 10 percent motorized use) are attributed to all recreation activities now occurring in the WSA. Because of access, recreation use tends to concentrate around the Miners and Muskrat Canyon areas with their 2 miles of vehicular way. The entire WSA is open to limited ORV use. Administrative limitations involve type of vehicle and

season-of-use restrictions. Steep terrain provides the foremost limit to ORV use.

Opportunities for high quality primitive recreation use exist for the following activities: hunting, hiking, backpacking, horseback riding, camping, and nature study or photography.

Land Use Plans

The entire North Stansbury Mountains WSA consists of public land. No State or private in-holdings are present. State lands are found adjacent to the WSA in two locations and private lands are adjacent in four locations (refer to Map 1 and Appendix 3 in Volume I). There are no existing rights-of-way or pending rights-of-way applications within the WSA.

The North Stansbury Mountains WSA is currently managed under the BLM Tooele Planning Area MFP (USDI, BLM, 1984c). That plan includes a preliminary indication of wilderness designation for 8,700 acres of the WSA.

South of the North Stansbury Mountains WSA is the Grantsville Unit of the Wasatch National Forest. The Forest Plan recommends that the National Forest adjacent to the WSA be managed for primitive values; however, the Utah Wilderness Act of 1984 did not include that area for wilderness designation. The designated Deseret Peak wilderness is about 5 miles to the south of the WSA. The land use plan for the Wasatch National Forest to manage the land intervening between the Deseret Peak wilderness and the North Stansbury Mountains WSA for semi-primitive, nonmotorized uses (Hubbard, 1985). The FS will manage these adjacent lands for primitive values until the BLM's North Stansbury Mountains WSA is either dropped from consideration or designated as wilderness.

UDWR has plans for introduction of bighorn sheep and elk into the Stansbury Mountains.

There are no State-of-Utah owned lands in the WSA. However, the Utah State Legislature passed S.C.R. No. I in 1986 opposing any additional wilderness designation in Utah and urging that State lands not be exchanged out of WSAs or wilderness areas.

The Tooele County Master Plan is not specifically directed to the North Stansbury Mountains WSA (Mountain Area Planners, 1972). Land use in Tooele County is generally discussed throughout the master plan as wise multiple and cooperative uses. Wilderness is not addressed. The Master Plan states:

> "The major part of unincorporated land in Tooele County is shown on the Master Plan Maps as multiple-use areas. It is proposed that these lands be subject to conditional use permits for all uses; that primary uses allowed be forestry, stock grazing, mining, and recreational activities in appropriate areas; that emphasis of management practices be placed on conservation and wise use of natural resources, to permit and encourage improvement in soils stability, plant cover, water quantity and quality, and scenic beauty."

The Tooele County Commission has endorsed the Consolidated Local Government Response to Wilderness that opposes wilderness designation of BLM lands in Utah (Utah Counties, 1986).

According to the Tooele County Commission: "wilderness designation would be in direct conflict with the Tooele County Master Plan and current zoning designations which were developed and adopted many years before any wilderness proposals were considered. The entire area adjacent to the forest boundary and including all BLM lands have been designated as an industrial development zone."

The North Stansbury Mountains WSA is in the South Range of the USAF's Utah Test and Training Range. The USAF position is that low level military overflights of the Utah Test and Training Range, including the North Stansbury Mountains WSA, would continue with or without wilderness designation (USAF, 1986).

Socioeconomics

- Demographics

The population within a 20-mile radius of the North Stansbury Mountains WSA is concentrated entirely within the boundaries of Tooele County and localized in three valleys surrounding the Cedar and Stansbury Mountain ranges.

From 1960 to 1980, the population of Tooele County grew from 17,868 to 26,200, an overall increase of about 45 percent and an average annual increase of over 2.28 percent. Table 8 presents baseline and projected population data for Tooele County. It is estimated that between 1980 and 1987, population increased to about 28,600. Population projections for

the county indicate that the number of people living in Tooele County in the year 2010 will be about 42,700 for about a 69 percent increase over 1980 levels (University of Utah, BEBR, 1987).

Table 8
Baseline and Projected Population and Employment Growth
Tooele County

	1980	1990	2000	2010
Population	26,200	30,000	35,000	42,700
Employment	10,649	12,200	14,300	16,600

Source: Utah Office of Planning and Budget, 1987.

The population of Tooele County is heavily concentrated (about 85 percent) in Tooele Valley, or that northeastern corner of the county referred to on the table as the Tooele-Grantsville Division. This area is 6 to 15 miles southeast of the North Stansbury Mountains WSA. The remaining 15 percent of Tooele County's population is scattered throughout the county.

The population density of Tooele County is about 3.76 people per square mile. Population centers within about 100 miles of the North Stansbury Mountains WSA include Salt Lake City-Ogden and Provo-Orem, with a combined population of approximately 1,155,000.

- Employment

Military installations are the largest employers in the county. The Tooele Army Depot accounts for more than 50 percent of total nonagricultural employment in the county. Farm employment represents a very small percentage (less than 2 percent) of the county employment and income (University of Utah, Bureau of Economic and Business Research, 1979). Mining employment in the county has been declining in recent years.

Tooele County is part of the Wasatch Front Multi-County District (MCD). Table 9 shows the baseline (1980) and projected employment by source for the MCD to the year 2010. In 1980 the leading employment sectors for the Wasatch Front MCD were trade (23 percent), government (20 percent), and services (17 percent). Mining provided approximately 2 percent of the direct employment in the MCD which includes large operations such as the Kennecott Copper Mine. It is projected that by the year 2010 employment in the MCD will double. Trade will increase to 24 percent and services to 22 percent of the total. Government will decline to 15 percent and mining to 1 percent of the total.

Table 9
Wasatch Front Multi-County District
Employment[a]

	1980	1990	2000	2010
Agriculture	5,315	5,600	5,700	5,900
Mining	7,122	3,000	3,400	3,900
Construction	21,608	26,500	35,600	45,600
Manufacturing	60,121	70,600	91,900	115,300
Transportation, Utilities	26,989	33,100	42,000	51,600
Trade	95,989	126,400	161,200	200,300
Finance, Insurance, Real Estate	20,770	30,800	39,000	48,900
Services	71,019	116,500	155,300	189,400
Government	86,017	103,800	111,800	127,600
Nonfarm Proprietors	26,016	35,100	42,600	55,200
Totals	422,875	551,400	688,500	843,700

Source: Utah Office of Planning and Budget, 1987.

[a]Includes Davis, Morgan, Salt Lake, Tooele, and Weber Counties.

- Sales and Revenues

Economic-related activities in the North Stansbury Mountains WSA include mineral exploration, livestock production, and recreation. Mineral resources in Tooele County include limestone, metallic minerals, potassium salts, tungsten, salt, clays, and sand and gravel. In 1983, the latest year for which dollar value statistics are available, Tooele County produced $37 million worth of nonfuel minerals (University of Utah, BEBR, 1987).

There are no noncompetitive oil and gas leases in the WSA, and no leasing revenues are produced. This situation is related to both the poor economic condition of the oil and gas industry and exclusion of leasing in WSAs.

The WSA has five mining claims. Regulations require a $100 annual expenditure per claim for labor and improvements, an undetermined part of which is spent in the local economy. Mineral production or mine development in the North Stansbury Mountains WSA is limited to a single, sometimes active, mining operation in Burnt Canyon along the WSA's southeast boundary. The mine is not presently producing, but assessment work is being continued.

Six stockmen seasonally graze cattle and horses on 495 AUMs scattered across the three grazing allotments found in the WSA. At the current approximate fee of $1.54 per AUM (as of March 1, 1988) these six ranchers pay $762.30 per year in Federal

revenue to graze their livestock within the WSA boundaries. Marketing of livestock which use the WSA contributes to local income. About $9,900 of livestock sales, including $2,475 in ranchers' return on investment and labor, are attributed to the AUMs in the WSA.

Woodland products are not presently being taken from the unit; therefore, no revenue is generated from this resource.

Recreation has not proven to be a significant income producer. Hunting accounts for nearly all of the current recreation use in the WSA. Revenue generated by the sale of hunting licenses to people planning to specifically hunt this WSA is considered to be insignificant. The actual amount of income generated locally from recreational use in the WSA is unknown. However, an approximate range of expenditures can be deduced (Dalton, 1982). This study indicates that the Statewide average local recreation related local expenditures per recreational visitor day (12 hrs.) for all types of recreation in Utah are approximately $4.10. The total recreational use for North Stansbury Mountains is estimated as about 300 visitor days per year, resulting in a total estimated annual local expenditure of $1,230 related to the WSA. Recreation-related income from this WSA is therefore only a small contribution to the Tooele County economy.

Table 10 summarizes current local sales and Federal revenues related to the North Stansbury Mountains WSA. Appendix 9 in Volume I identifies the multipliers used to estimate local sales and Federal revenues.

Table 10
Sales and Revenues

Source	Estimated Annual Local Sales[a]	Estimated Annual Federal Revenues
Oil and Gas Leases	None	None
Mineral Production (Assessment)	$ 500	None
Livestock Grazing	$ 9,900	$ 762
Woodland Products	None	None
Recreational Use	$ 1,230	None
Total	$11,630	$ 762

Sources: USDI, BLM, 1982a; Appendix 9 in Volume I.

[a]Local sales represent money potentially spent. They do not account for the total income that would be generated by these expenditures.

ENVIRONMENTAL CONSEQUENCES OF ALTERNATIVES

This section describes the environmental consequences of implementing the alternatives. The analysis is based on the BLM management actions and anticipated activities presented in the Introduction to Volume II and the Description of the Alternatives for the North Stansbury Mountains WSA.

No Action/No Wilderness Alternative

- Impacts on Wilderness Values

If not designated wilderness, the wilderness values in the WSA would not receive the protection afforded by application of the Wilderness Management Policy (BLM Manual 8560). In the foreseeable future, the projected mineral exploration expected on up to 2 acres in T. 2 S., R. 7 W., secs. 11 and 24 would result in a loss of naturalness and opportunities for primitive and unconfined recreation in the area of direct disturbance. Sights and sounds of mineral and related exploration, including drilling operations, would reduce solitude and opportunities for primitive recreation not only in the disturbed areas but also indirectly in adjacent areas during the period of activity. It is possible that these opportunities would be indirectly reduced on as much as 3,000 acres or 29 percent of the WSA during periods when exploration occurs. It is unlikely that more than 1,500 acres or 14 percent of the WSA would ever be affected at one time. About one-third of the portion of the WSA that would be affected has outstanding opportunities for primitive recreation and about two-thirds of the affected area has outstanding opportunities for solitude.

Visitor use would continue to be 90 percent primitive in nature and would not affect wilderness values because the size of the unit would allow for increased use. Motor vehicle use would continue to occur on the existing 2 miles of ways. Vehicle use would mainly be for access purposes and would generally be limited by terrain to the areas where it now occurs. Primitive recreation opportunities in the WSA would, therefore, not be lost. Neither, however, would such opportunities in the North Stansbury Mountains be enhanced as they would with designation of a larger BLM-FS wilderness.

Special features, including scenic areas and the known cultural site with National Register potential, are in areas where mineral exploration is unlikely in

the foreseeable future; therefore, no disturbance to these special features is anticipated. Disturbance of sensitive and endangered animal species, as well as cougars and bighorn sheep, is also unlikely for the same reason. In addition, sensitive and endangered species would be protected as required by the Endangered Species Act and BLM policy.

Overflights by military aircraft would continue to be an occasional annoyance that would detract from opportunities for solitude in the WSA.

The degree of loss of wilderness values that would occur from mineral or other development over the long term is not accurately known, but loss would occur as intrusions increase.

Conclusion: Wilderness values would not be protected by wilderness designation and loss would occur as intrusions increase. In the foreseeable future, naturalness and opportunities for solitude and primitive recreation would be directly lost on 2 acres and opportunities for solitude and primitive recreation would be indirectly reduced in quality on 1,500 to 3,000 acres. Special features would not be significantly affected.

• Impacts on Mineral and Energy Exploration and Production

With the No Action/No Wilderness Alternative, all Federal lands in the WSA would remain open to oil and gas leasing subject to Category 2 stipulations. The entire WSA would remain open to mining claim location, exploration, and potential development in the long term.

Conclusion: Implementation of the No Action/No Wilderness Alternative would not adversely affect energy or mineral exploration or development.

• Impacts on Livestock Management

Domestic livestock grazing would continue as authorized in the MFP or current planning document. The 495 AUMs in the WSA are currently allocated to six livestock permittees. Although none are now planned, additional roads, trails, or other facilities for livestock handling could be proposed and developed in the future without regard for wilderness values. Few, if any, changes in livestock management techniques are expected. Predator control by low-level flights would continue to control predators in the WSA to protect sheep grazing in the WSA and on adjacent private lands.

Conclusion: The No Action/No Wilderness Alternative would not affect livestock grazing management in the WSA.

All Wilderness Alternative (Proposed Action) (10,480 Acres)

• Impacts on Wilderness Values

Wilderness designation would contribute to the preservation of the area's wilderness values. With this alternative, the potential for surface-disturbing activities that could impair wilderness values would be reduced through management under VRM Class I (which generally allows for only natural ecological change), through ORV closure, and through closure of the entire area to future mineral leasing and location.

Some mineral exploration involving existing mining claims is anticipated to occur even with wilderness designation. This would impact wilderness values but to only half the extent identified for the No Action/No Wilderness Alternative. The reduction is based on the assumption that new claims would not be entered in the designated wilderness area. However, existing claims could be developed because of grandfather rights. Projected mineral exploration is expected to occur up to 1 acre distributed in T. 2 S., R. 7 W., secs. 11 and 24. Mitigation to protect wilderness values would be considered during mining claim exploration, but temporary road construction and use of motorized equipment, including drilling rigs, would be allowed for exploration of mining claims if there are no reasonable alternatives. Direct loss of naturalness and outstanding opportunities for primitive and unconfined recreation would occur in the areas where surface disturbance from mineral exploration would occur on less than 1 percent of the WSA. Sights and sounds of mineral-related exploration, including drilling operations, would reduce solitude and opportunities for primitive recreation not only in the disturbed areas but indirectly in adjacent areas as well. It is possible that these opportunities would be indirectly reduced on as much as 1,500 acres or 14 percent of the WSA during periods when exploration occurs. About one-third of the portion of the WSA that would be affected has outstanding opportunities for primitive recreation and about two-thirds of the area has outstanding opportunities for solitude.

NORTH STANSBURY MOUNTAINS

Special features including scenic, biological, and archaeological values would be preserved.

Recreation trends in the WSA would be altered slightly by the All Wilderness Alternative as ORV use in the bottom of Muskrat Canyon would be eliminated. Elimination of ORV use would reduce disruption of solitude and would benefit primitive recreational activities and values in the canyon. All recreational use would be primitive in nature and would be managed to preserve wilderness values in the area.

Enhancement of primitive recreation opportunities would occur with designation of a larger BLM-FS wilderness.

Overflights by military aircraft would continue to be an occasional annoyance that would detract from opportunities for solitude in the WSA.

The loss of wilderness values that would occur from mineral exploration and development over the long term is unknown, but would be less than with the No Action/No Wilderness Alternative because mineral development would be restricted to existing claims.

Conclusion: Wilderness values would be preserved overall. In the foreseeable future, naturalness and opportunities for solitude and primitive recreation would be directly lost on 1 acre and opportunities for solitude and primitive recreation would be indirectly reduced in quality on 1,500 acres due to valid existing rights.

- Impacts on Mineral and Energy Exploration and Production

  - Leasable Minerals

    No oil and gas leases are located in the WSA, and no exploration or production of oil and gas is presently occurring. Due to the small size of the potential deposits, the low certainty that these exist, and the low likelihood of exploration and development activities, it is concluded that this alternative would not result in a significant loss of potential oil and gas recovery.

    Because of no local demand for the low temperature geothermal heat source, no development would be expected even without wilderness designation. No loss of geothermal production is expected as a result of wilderness designation.

  - Locatable Minerals

    The North Stansbury Mountains have potential occurrences of small deposits of copper, lead, and zinc. Designation could eliminate or severely constrain possible future exploration of these minerals. Although this is a historic mining district, activity has been sporadic and production light over the last several decades.

    In the short term, exploration for locatable minerals could occur on any of the existing mining claims, if valid. However, no activity would be allowed in those areas of the WSA not covered by mining claims at the time of wilderness designation. Therefore, the possibility exists that exploration opportunities for these minerals would be foregone as a result of wilderness designation.

Conclusion: Wilderness designation would eliminate or severely constrain potential exploration and production opportunities for locatable minerals known to occur in the WSA. Loss of exploration and development opportunities for other mineral and energy resources would not be significant.

- Impacts on Livestock Management

Livestock grazing would continue as authorized in accordance with the Tooele MFP. The 495 AUMs in the WSA are currently allocated to cattle, sheep, and horses owned by six livestock permittees.

Management of livestock grazing would be affected by limitations on vehicular use and restrictions on predator control methods. However, in the North Stansbury Mountains WSA, only 2 miles of ways presently used by livestock operators would be closed to use. Restrictions on predator control methods would lead to slightly higher predator populations and increased loss of sheep, mainly on private lands adjacent to the WSA. The overall affect would be small since total confirmed livestock loss for the 1986-1987 period in the allotments that comprise the WSA was only three sheep, and several methods of predator control would still be available.

Conclusion: Restrictions on vehicle use on 2 miles of way would be an inconvenience to the six livestock operators who manage livestock in the WSA. There would be slight increases in livestock losses to predators. The overall effect on methods and costs of livestock management would be negligible.

Partial Wilderness Alternative (8,700 Acres)

Designation of 8,700 acres in the WSA would have essentially the same affects on livestock management as the All Wilderness Alternative (10,480 acres). Therefore, analysis of this resource is not repeated for the Partial Wilderness Alternative.

- Impacts on Wilderness Values

Wilderness designation would protect wilderness values on 8,700 acres. Naturalness (all 8,700 acres appear natural), opportunities for solitude and primitive recreation (2,890 acres have outstanding solitude and 2,940 acres have outstanding primitive recreation opportunities), and such special features as scenic and cultural values, endangered and sensitive species, and wildlife associated with wilderness would be protected.

Direct loss of naturalness and outstanding opportunities for primitive and unconfined recreation would occur over the foreseeable future on up to 2 acres within the nondesignated portion of the WSA from mineral exploration. This is the same impact to wilderness values that would occur with the No Action/No Wilderness Alternative. Sights and sounds from mineral-related exploration including drilling operations could reduce solitude and opportunities for primitive recreation not only in the disturbed area, but indirectly in adjacent areas as well. It is possible that these opportunities would be reduced on up to 3,000 acres (29 percent) of the WSA (1,220 acres inside the designated wilderness and over 1,780 acres in the area not designated), but it is likely that no more than 14 percent (1,500 acres) of the WSA would be affected at one time. The scenic values and known archaeological features are in the portion of the WSA that would be designated and would be preserved. Disturbance of sensitive and endangered animal species and of cougar and Rocky Mountain bighorn sheep (if transplanted) would not occur in the designated area, and is unlikely in the nondesignated portion as well. Any sensitive and endangered animal species in the nondesignated portion would be protected as required by the Endangered Species Act and BLM policy.

Primitive recreation opportunities would be enhanced by designation of a larger BLM-FS wilderness.

Vehicular use of 0.25 mile of way in the nondesignated area and overflights by military aircraft would continue to be occasional annoyances that would detract from opportunities for solitude in the WSA.

The loss of wilderness values that might occur from mineral exploration and development over the long term is unknown, but would be less than with the No Action/No Wilderness Alternative because disturbance would be restricted to existing claims in the nondesignated area.

Conclusion: Wilderness values would be preserved in the designated area which is about 83 percent of the WSA. In the foreseeable future, naturalness and opportunities for solitude and primitive recreation would be directly lost in the nondesignated area on 2 acres and opportunities for solitude and primitive recreation would be indirectly reduced in quality on 1,500 to 3,000 acres. Special features would be preserved.

- Impacts on Mineral and Energy Exploration and Production

  - Leasable Minerals

    The area that would be designated wilderness would be placed in Category 4 status with no new leasing. In the future, the 1,780 acres not designated could have leases issued without wilderness considerations. It is concluded that, due to the small size of the potential deposits, the low certainty that these exist, and the low likelihood for exploration and development activities, this alternative would not result in significant loss in recovery of the oil and gas resource.

    This alternative would not be expected to have any impact to geothermal resources due to the low probability of development even without wilderness designation.

  - Locatable Minerals

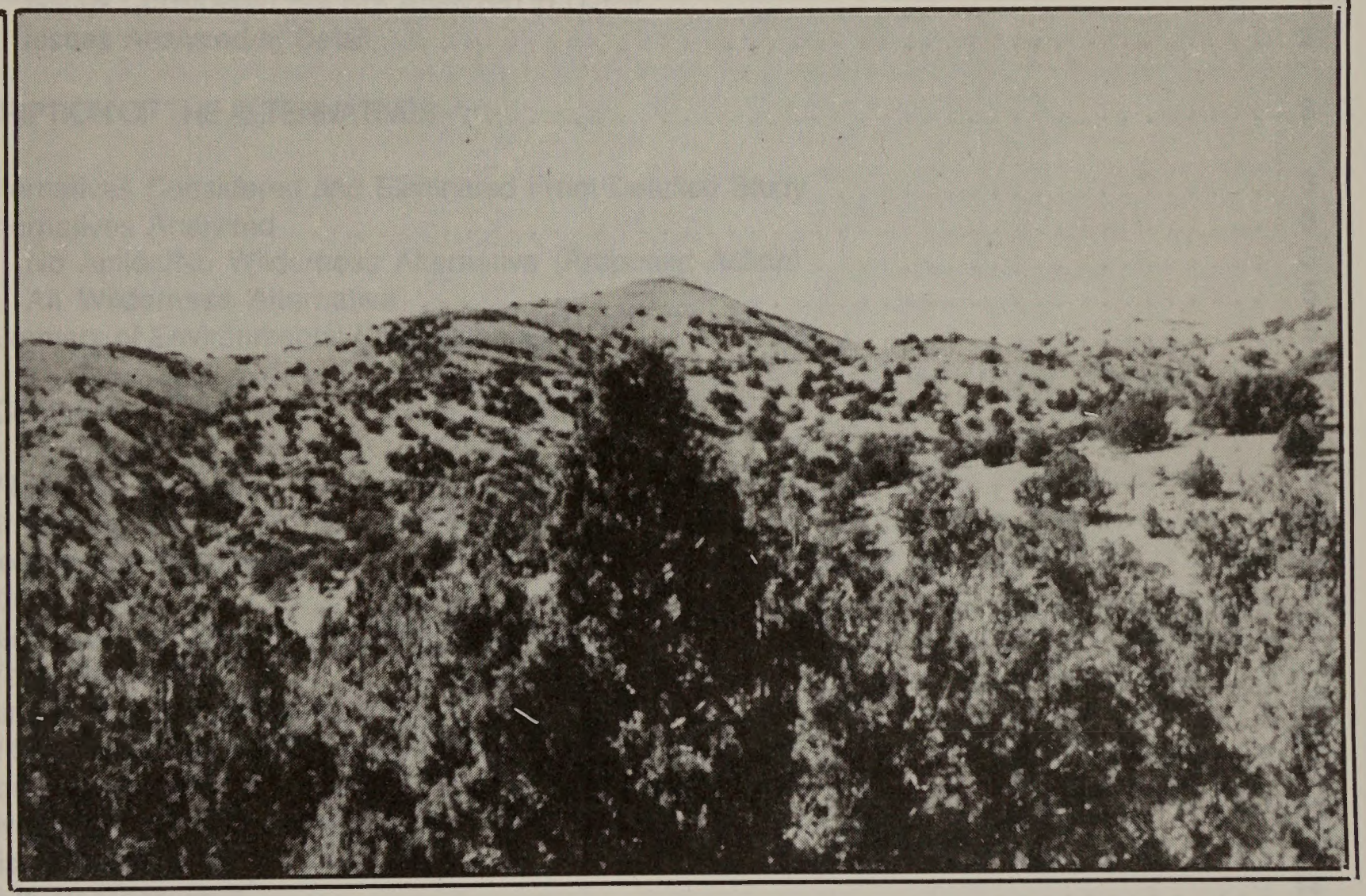
    Development work, extraction, and patenting could continue on valid claims after wilderness designation under unnecessary or undue degradation guidelines. After designation, all other lands (including claims not determined valid) would be closed to prospecting and development (BLM Manual 8560).

    It cannot be determined how much of the potentially recoverable, locatable minerals in the WSA are within the 8,700-acre area that would be designated as wilderness under this alternative. A

much greater certainty for avoiding conflict with mineral resources could be achieved by nondesignation of 1,780 acres. The 1,780 acres are believed to cover essentially all of the mineralized zone on the east side of the North Stansbury Mountains WSA. Therefore, it is concluded that the 8,700-acre Partial Wilderness Alternative would have little or no effect on the future availability and extraction of these minerals. With this conclusion, it is noted that the exact limits of the mineralized geological deposit along the east side of the WSA are generally, but not precisely defined. All five existing mining claims would be nondesignated with this alternative.

Conclusion: The Partial Wilderness Alternative would not adversely affect mineral and energy exploration and development.

Cedar Mountains WSA



CEDAR MOUNTAINS WSA

TABLE OF CONTENTS

INTRODUCTION 1

General Description of the Area 1
Changes for the Final EIS 1
Specific Issues Identified Through Scoping and Public Comment 1
Issues Considered But Not Analyzed in Detail 1
Issues Analyzed in Detail 2

DESCRIPTION OF THE ALTERNATIVES 3

Alternatives Considered and Eliminated From Detailed Study 3
Alternatives Analyzed 3
No Action/No Wilderness Alternative (Proposed Action) 3
All Wilderness Alternative 5
Summary of Environmental Consequences 5

AFFECTED ENVIRONMENT 8

Wilderness Values 8
Air Quality 9
Geology and Topography 9
Soils 9
Vegetation Including Special Status Species 10
Water Resources 10
Mineral and Energy Resources 10
Wildlife Including Special Status Species 12
Forest Resources 13
Livestock and Wild Horses/Burros 13
Visual Resources 14
Cultural Resources 14
Recreation 14
Land Use Plans 15
Socioeconomics 15

ENVIRONMENTAL CONSEQUENCES OF ALTERNATIVES 17

No Action/No Wilderness Alternative (Proposed Action) 17
All Wilderness Alternative 18

TABLE OF CONTENTS

CEDAR MOUNTAINS WSA

CEDAR MOUNTAINS WSA

(UT-020-094)

INTRODUCTION

General Description of the Area

The Cedar Mountains WSA contains 50,500 contiguous acres of public land located in east-central Tooele County, approximately 65 miles west of Salt Lake City and 40 miles west of the community of Tooele, Utah. The unit consists of public land in the central portion of the Cedar Mountains, between Hastings Pass on the north and Rydalch Pass on the south.

The Cedar Mountains WSA consists of a long, single ridgeline, typically Basin and Range in geologic structure. At the elevation of 5,000 feet, the mountains gradually become more pronounced as outwash fades into a smooth, almost inconspicuous blending of canyons, washes, and gullies which narrow without prominent twisting. The mountain's crest varies from the 7,712-foot Cedar Peak to numerous 6,000-foot elevations scattered along a 20-mile-long ridgeline.

Vegetation along the lower slopes of the Cedar Mountains consists of a mixture of shadscale/cheatgrass/halogeton ground cover. Sagebrush, rabbitbrush, and wheatgrasses combine with individual juniper trees at approximately 5,000 feet to add vegetation texture to the landscape.

At higher elevations (above 5,800 feet), the main ridge and south-facing slopes are often bare and unshaded, with occasional stands of juniper trees.

Estimated annual precipitation ranges from 8 inches along the lower contours of the unit to 16 inches along the 7,712-foot crest of the mountain. Temperatures range from a low of -30 degrees Fahrenheit (F) in the winter to over 100 degrees F in the summer.

Changes for the Final EIS

In addition to the changes noted in the Introduction to Volume II, the following changes specific to the WSA have been made since publication of the Draft EIS.

1. On Map 2, the western boundary of the WSA was redrawn to exclude a 40-acre parcel that was inadvertently shown inside the WSA in the Draft EIS.

2. The anticipated surface disturbance presented in the Draft EIS (316 acres) was based on the assumption that all mineral and other resources potentially within the WSA would be developed sometime in the future without consideration of technical or economic feasibility. In response to public comments relative to the feasibility of developments, the disturbance estimates have been revised to focus on activities projected to be feasible within the foreseeable future (see Appendix 6 in Volume I). This resulted in a reduction of surface disturbance estimates from the 316 acres reported in the Draft EIS to no surface disturbance for the Final EIS.

The alternatives analyzed in detail have not changed, and the No Action/No Wilderness Alternative continues to be the BLM Proposed Action. A summary of the rationale for the BLM Proposed Action has been added as Appendix 11 in Volume I.

Specific Issues Identified Through Scoping and Public Comment

- Issues Considered But Not Analyzed in Detail

In addition to the issues discussed and eliminated from further consideration in the Introduction to Volume II (i.e., impacts on air quality, geology and topography, soils, water rights, and land use plans and policies) the following issues or impacts specific to the Cedar Mountains WSA were considered but are not analyzed in detail in the Final EIS for the reasons described below.

1. Vegetation Including Special Status Species: Estimates of surface disturbance without wilderness designation have been revised downward from the 316 acres reported in the Draft EIS to little or no surface disturbance in the Final EIS. Given this new scenario, direct disturbance of vegetation would not occur with any of the alternatives. There are no threatened, endangered, or other special status plant species known to occur within the WSA. In any event, BLM would conduct site-specific clearances of potentially disturbed areas and consult with FWS concerning impacts on threatened or endangered plant species. If

STATEWIDE
POCKET MAP
WSA
NO. 2
SEE VOL.I

special status species are found in areas changed by ORV use; signing, additional closures, or other measures would be taken to protect those species. Therefore, impacts on vegetation are not analyzed in detail for the Cedar Mountains WSA.

2. Water Resources: There are no perennial streams or proposed water developments in the Cedar Mountains WSA. Therefore, impacts on water uses and quality are not significant issues for analysis in the Final EIS.

3. Mineral Resources: The public has expressed concern that wilderness designation would interfere with or prevent mineral and energy exploration, development, and production. There are no existing oil and gas leases within the WSA. Potential oil and gas deposits are small with a low certainty that they exist. Phosphate deposits are known inside the WSA but are not leased and cannot be economically developed in the foreseeable future. Even though there are two mining claims inside the WSA and a known aragonite deposit, locatable mineral deposits are thought to be uneconomical for development. There is little demand for columnar basalt from the WSA and more accessible deposits of other salable minerals exist outside the WSA. For these reasons, it is determined that mineral exploration or development would not occur in the foreseeable future with or without wilderness designation (see Appendix 6 in Volume I). Therefore, impacts on mineral and energy exploration and production are not analyzed in detail in the Final EIS.

4. Wildlife Including Special Status Species: The public is concerned that without wilderness designation, mineral, or other developments would destroy wildlife habitat and lead to reductions in wildlife populations. They are also concerned that use of ORVs would disturb wildlife and destroy habitat. The Cedar Mountains WSA provides habitat for a variety of animal species; however, populations are low. One endangered and nine other special status animal species may be found in the WSA.

Because no mineral developments are expected in the WSA in the foreseeable future, wildlife habitats would not be lost. ORV use is expected to increase, but not to a level that would reduce wildlife populations. No critical habitats are found in the WSA. Therefore, impacts on wildlife are not significant issues for the Cedar Mountains WSA. Impacts to special status species are addressed as impacts to special features in the Wilderness Values section.

5. Forest Resources: Juniper is the only woodland species in the WSA. It is too sparse and isolated to provide an economically feasible product. Therefore, impacts on forest resources are not significant issues for analysis in the Final EIS.

6. Wild Horses: There are an estimated 200 head of wild horses that range into the Cedar Mountains WSA. However, the home range for the majority of these horses is outside of the WSA. Only 20 are estimated to inhabit the WSA during the summer. Wild horses would remain in the WSA with or without wilderness designation. Therefore, impacts on wild horses are not significant issues for the Final EIS.

7. Visual Resources: As discussed above for vegetation, little or no surface disturbance is projected for the WSA in the Final EIS. Therefore, visual resources would not be significantly affected and are not addressed in the Final EIS as a separate topic.

8. Economic Conditions: The public, including State and local government, is concerned that wilderness designation would preclude mineral or other economic developments and adversely affect local economic conditions. Others believe that primitive recreation use would increase following wilderness designation and would contribute to the local economy.

There are no existing or anticipated mineral developments or proposals for lands or realty activities which would be impaired with or without wilderness designation. Because no economic developments are expected, and because recreational use would not be affected on a regional basis (see Recreation analysis), impacts on economic conditions WSA are not significant issues for the Final EIS.

- Issues Analyzed in Detail

The significant issues for the Cedar Mountains WSA are:

1. Impacts on the wilderness values of naturalness, opportunities for solitude and primitive recreation, and special features.

2. Impacts on livestock management, including vehicle access and predator control.

3. Impacts on cultural resources.

4. Impacts on recreation.

CEDAR MOUNTAINS WSA

Comments made during the public comment period for the Draft EIS centered mainly on the inventory phase of the wilderness review and questions on BLM's assessment of the value of wilderness versus other resource values. BLM's determination on manageability of the WSA and the feasibility of mineral developments were also questioned. See Volume VII-B for responses to general comments applicable to all WSAs and/or the Statewide analysis and Volume VII-C, Section 2, for responses to specific comments about the Cedar Mountains WSA.

DESCRIPTION OF THE ALTERNATIVES

Alternatives Considered and Eliminated From Detailed Study

During scoping and public comment, alternatives were suggested that would add a total of 4,500 acres to the north and east sides of the WSA. These areas were considered during the inventory phase and are not analyzed further in the Final EIS.

A Partial Wilderness Alternative was also suggested. Because there are no significant conflicts with other resources to be resolved by a boundary change, a Partial Wilderness Alternative was not analyzed.

Alternatives Analyzed

Two alternatives are analyzed for this WSA: (1) No Action/No Wilderness (Proposed Action) and (2) All Wilderness (50,500 acres). A description of BLM's management practices with each alternative follows. Where management intentions have not been clearly identified, assumptions are made based on management projections. These assumptions are indicated in each case. The assumed BLM management actions described in the Introduction to Volume II are also applicable.

- No Action/No Wilderness Alternative (Proposed Action)

With this alternative, none of the 50,500-acre Cedar Mountains WSA would be designated by Congress as part of the NWPS. Although BLM's land use plans are regularly updated, it is assumed that the area would continue to be managed for multiple uses in accordance with the general provisions of the Tooele Planning Area Management Framework Plan (MFP) and subsequent activity plans (USDI, BLM, 1984c).

There are six sections (3,264 acres) of private lands with State-owned minerals (split-estate) within the WSA (refer to Map 1 and Appendix 3 in Volume I). Two sections (1303.8 acres) are under State lease for oil, gas, and hydrocarbons. There is no State-owned surface land in the WSA. State and private inholdings are analyzed as remaining under existing ownership. The figures and acreages given are for Federal lands only.

- Management Conditions and Constraints

All 50,500 acres would remain open to mineral location and to mineral sale. Development work, extraction, and patenting would be allowed on the two existing lode claims (40 acres) and any future mining claims, if determined to be valid. Mining development would be regulated by unnecessary or undue degradation guidelines (43 CFR 3809), without consideration for wilderness values.

There are no leases in the WSA. For any new leases all 50,500 acres would be placed in Category 2 (open leasing with special stipulations) to prevent activity within deer fawning areas between May 15 and July 15, and on slopes greater than 30 percent. Although mineral resources would be managed as described above, no mineral exploration or development is projected because the level of known resources and/or the probability of their development is too low to support a development assumption. Appendix 6 in Volume I explains the mineral exploration and development assumptions.

The level of domestic livestock grazing use of the Cedar Mountains WSA would continue as authorized in the Tooele MFP at an estimated level of 3,293 AUMs. There are no existing rangeland developments, but wildfire rehabilitation was done in 1983 on 3,000 acres of the WSA. The WSA could continue to be used by part of the Cedar Mountains wild horse herd. About 20 animals occupy the WSA during the summer.

The entire WSA acreage would continue to be open to ORV use. Eighteen miles of existing ways would remain open to vehicle use. Use of vehicles is expected to increase and expand in the foreseeable future.

The entire 50,500-acre area would be open to woodland product harvest. There is no harvest of

CEDAR MOUNTAINS WSA

Map 1
LAND STATUS
Cedar Mountains WSA
Ut-020-094

Legend

WSA Boundary

Split-estate (private surface-state minerals) Land Within or Adjacent to WSA

Split-estate (federal surface-state minerals) Land Within or Adjacent to WSA

BLM Administered Land Within or Adjacent to WSA

SCALE IN MILES
0 1 2

SCALE IN KILOMETERS
0 1 2 3

ELEVATION EXPRESSED IN METERS

N

CEDAR MOUNTAINS

GREAT SALT LAKE DESERT

SKULL VALLEY

Sand Dunes

Broyles Spring

Rydalch Canyon

Rydalch Pass

Cedar Spring

Black Knoll

T. 2 S.

T. 3 S.

T. 4 S.

R. 11 W.

R. 10 W.

forest products at the present time, nor is any expected because juniper is the only woodland species and is too sparse and isolated to provide an economically feasible product.

The area would be managed under VRM Class III on 9,920 acres and Class IV on 40,580 acres.

- Action Scenario

Given the BLM management action described above, and the resources described in the Affected Environment section, BLM anticipates that implementation of the No Action/No Wilderness Alternative would not result in any project-related surface-disturbing activities in the foreseeable future. No locatable or leasable mineral resource exploration or development is projected. No rangeland, wildlife habitat, or watershed improvement projects are planned or expected. ORV use and disturbance would expand in locations scattered throughout the WSA.

Recreation use would increase over the current estimated use of 384 annual visitor days at a rate of 2 to 7 percent per year. Approximately 93 percent of the use would continue to be vehicular in nature.

- All Wilderness Alternative

With this alternative, all 50,500 acres of the Cedar Mountains WSA would be designated by an act of Congress as part of the NWPS (refer to Map 2). It would be managed in accordance with the BLM Wilderness Management Policy to preserve its wilderness character (BLM Manual 8560). Six sections of State minerals (split-estate) are within the WSA (refer to Map 1 and Appendix 3 in Volume I). The policy of the State is to reserve its position regarding exchange of in-held lands within any particular WSA. Based on this policy and provisions of BLM's Wilderness Management Guidelines for private lands, it is projected that State and private lands would remain under existing ownership. The figures and acreages given under this alternative are for Federal lands only.

- Management Conditions and Constraints

After wilderness designation, all 50,500 acres would be withdrawn from mineral location and closed to new mineral leasing and mineral sale. The two existing lode claims, if valid, could be developed on 40 acres under valid and existing rights. Development is not likely in the foreseeable future because of low demand and economic condition. If developed would be controlled by unnecessary or undue degradation regulations (43 CFR 3809) with consideration given to wilderness values. There are no oil and gas leases in the WSA and new oil and gas leases would not be issued. Therefore, no leasable mineral activities would occur following designation.

The present level of domestic livestock grazing would continue as authorized in the Tooele MFP and related BLM plans. The estimated 3,293 AUMs in the WSA would remain available to livestock as presently allotted. The existing use in the WSA by about 20 wild horses would be allowed to continue.

The entire 50,500-acre area would be closed to ORV use except for: (1) users with valid existing rights if approved by BLM in accordance with 43 CFR 8560; or (2) for occasional and short-term vehicular access approved by BLM for maintenance of approved livestock developments. Eleven old vehicular ways totaling about 18 miles would be closed. Reasonable road access to the 3,264 acres in six tracts of private land in-holdings would be allowed as required. About 13 miles of roads bordering the WSA would be allowed to remain open to vehicle use.

- Action Scenario

Given the BLM management actions described, BLM does not project any surface disturbance in the foreseeable future. No development of existing mining claims is projected. No rangeland, wildlife habitat, or watershed improvements are projected following wilderness designation.

No disturbance from ORV use is projected due to wilderness management constraints.

Overall, recreation use is projected to decrease because ORV use would not be allowed. Primitive-type use would increase over the current estimated primitive use of 27 annual visitor days at a rate of 2 to 7 percent per year.

Summary of Environmental Consequences

Table 1 summarizes the environmental consequences of the No Action/No Wilderness and All Wilderness Alternatives.

CEDAR MOUNTAINS WSA

Map 2
ALL WILDERNESS ALTERNATIVE
Cedar Mountains WSA
UT-020-094

Legend

All Wilderness Alternative (50,500 acres)

N

SCALE IN MILES
0 1 2

SCALE IN KILOMETERS
0 1 2 3

ELEVATION EXPRESSED IN METERS

T. 2 S.

T. 3 S.

T. 4 S.

R. 11 W.

R. 10 W.

Table 1
Summary of Environmental Consequences

Resource	Alternatives: No Action/No Wilderness (Proposed Action)	Alternatives: All Wilderness (50,500 Acres)
Impacts on Wilderness Values	Wilderness values would not be protected by wilderness designation. In the foreseeable future, naturalness and opportunities for solitude and primitive recreation would be reduced in quality in scattered areas as ORV use increases. Special features would not be significantly affected.	Naturalness, opportunities for solitude and primitive recreation, and special features would be preserved.
Impacts on Livestock Management	Livestock grazing would not be affected.	Restrictions on access and predator control could inconvenience livestock permittees and increase management costs and loss of sheep to predators.
Impacts on Cultural Resources	Cultural sites would be subject to inadvertent damage from ORVs and increased vandalism.	Cultural resources would receive additional protection from vandalism and inadvertent disturbance but cultural resource management may be restricted in scope and execution.
Impacts on Recreation	ORV use would increase and reduce opportunities for primitive recreation, as would development of access to private and State mineral in-holdings.	Opportunities for primitive recreation would be preserved. Opportunities for ORV use would be lost, but the loss would not be significant on a regional basis.

CEDAR MOUNTAINS WSA

AFFECTED ENVIRONMENT

This section describes the overall environmental setting. This information also allows for independent assessment by the public as required by the CEQ guidelines and provides a data base for the cumulative Statewide analysis found in Volume I, as well as the Environmental Consequences of Alternatives described in this WSA analysis.

Unless otherwise indicated, information for this section was taken from BLM staff specialists, technical reports, and file documents.

Wilderness Values

- Size

The Cedar Mountains are located near the eastern edge of the Great Basin Province and in the middle of the Bonneville Basin (the expanse once covered by the waters of Lake Bonneville). A north to south trending range, the Cedar Mountains exhibit typical Basin and Range Physiography along a curved, asymmetrical axis.

Between Hastings Pass on the north and Rydalch Pass on the south, the WSA contains approximated 50,500 acres of BLM-administered lands. The WSA is approximately 20 miles long and 4.5 miles wide.

- Naturalness

About 50,000 acres in the WSA meet the standards for naturalness set by the Wilderness Act. About 75 acres have allowable minor imprints. About 500 acres do not meet the standards, as human impacts are substantially noticeable. The 500 acres are comprised of 450 acres that are disturbed by 18 miles of ways and 50 acres that have been disturbed in five mining prospects. Approximately 3,000 acres of the WSA were burned by wildfire and reseeded in 1983.

- Solitude

Topographically, the Cedar Mountains WSA is not spectacular. The gradient is seldom steep, as it rises gently from alkaline flats on the east and west sides and from the passes to the north and south. From the unit's low point on the west side (4,880 feet) to Cedar Peak (7,712 feet), a 2,832-foot rise is spread along approximately a 4-mile climb. Basic configuration of the Cedar Mountains consists of a single ridgeline along which many points rise above 6,800 feet. Steep, rugged cliffs are occasionally displayed across approximately 8 miles of the unit's eastern aspect. Erosion has exposed these cliffs as vertical sedimentary formations that terrace both the north and south aspects of east to west trending canyons. It is only here among these cliffs and in the canyons beneath that topographic screening of any significance occurs. The balance of the WSA is well-eroded and rounded into gentle slopes and shallow canyons or gullies.

Cover is present within the unit but generally not to the degree that vegetative screening provides outstanding opportunities for solitude. There are, however, isolated dense stands of juniper that, when combined with canyon topography, provide screening sufficient to cover man-made imprints, to separate recreationists, and to provide solitude.

The Cedar Mountains WSA is within the South Range of the U.S. Air Force's Utah Test and Training Range. The South Range runs approximately north to south from the southern boundary of the Bonneville Salt Flats to the San Francisco Mountains and east to west from the Sheeprock Mountains to 17 miles within Nevada. The South Range is one of the Nation's busiest military air spaces. There are about 15,000 aircraft, including all types of tactical fighters and bombers using the area. There are 100 to 150 (conservative estimate) military aircraft flights per day over the South Range 6 days per week. Flights occur as low as 100 feet above the ground surface. Speeds are subsonic except in the very northern portion of the test range in the area around Ibapah, where supersonic speeds also are reached. Heaviest use areas are in the northern part of the South Range, which includes the Cedar Mountains (Davies, 1985). To the west of the WSA are the Dugway Proving Ground and the Wendover Bombing and Gunnery Range.

Aircraft occasionally fly directly over the WSA, and these overflights can be a source of annoyance to visitors seeking solitude. Most of these overflights are not directly over the Cedar Mountains WSA and are subsonic in this area. Military flights are occasional off-site sights and sounds that detract from, but generally do not eliminate, the overall opportunities for solitude.

To the east of the WSA across Skull Valley are paved roads, a rocket testing center, and five ranches. Occasionally these off-site influences are an annoyance. About 10 percent (5,280 acres) of the WSA meets the standards for outstanding opportunities for solitude set by the Wilderness Act. About 90 percent

(45,220 acres) of the WSA does not have outstanding opportunities for solitude.

- Primitive and Unconfined Recreation

The Cedar Mountains offer a variety of marginal primitive recreational activities. Some hunting and horseback riding occurs. Deer, the primary big game species in the range, are not plentiful and attract limited numbers of hunters. On the other hand, upland game hunting is described at times as fair to good, especially along the unit's boundary road near developed springs.

Although water must be carried, backpacking, hiking, and rock climbing are activities available in the Cedar Mountains. Overall, slopes are not steep, although sheer limestone cliffs are present in isolated locations for the technical climbers. A potential highline or crest trail from White Rocks to the Hastings Pass could be of possible future interest.

Overall, primitive and unconfined recreation opportunities in the WSA are not outstanding.

- Special Features

The herd of 20 wild horses that roams the WSA was identified as a special feature during the wilderness inventory. While many areas in the western States have wild horse herds, actual sightings by the casual visitor are a relatively rare occurrence.

The WSA has resource values that, although not identified as such during the wilderness inventory, could be considered special features. The bald eagle, listed as endangered, migrates through the WSA. There are nine other special status animal species (golden eagle and eight Category 2 candidate species) in the WSA.

- Diversity

This WSA is in the Intermountain Sagebrush Province Ecoregion and has the PNV type of juniper-pinyon woodland. Refer to the Vegetation Including Special Status Species section for more discussion on ecoregions and PNV types. The ecoregion and PNV type represented by this WSA are compared with existing and other potential NWPS units in the Wilderness Values section of Volume I.

This WSA is within a 5-hour drive from two standard metropolitan statistical areas. These are Salt Lake City-Ogden, Utah, and Provo-Orem, Utah.

Air Quality

Air quality surrounding the Cedar Mountains WSA is classified as Class II under the EPA PSD Regulations. The major pollutant source consists of suspended particles of dust, most of which originate in the Great Salt Lake Desert, which are blown west to east across the interior of the Great Basin. This pollutant is not considered to be of critical importance along the Cedar Mountains Range. Normal visual range in the vicinity varies from about 30 to 50 miles during the summer.

Geology and Topography

The Cedar Mountains WSA lies in the central portion of the Cedar Mountain Range. The range, some 45 miles long, is located in the northeastern part of the Basin and Range Physiographic Province. The range follows some basic patterns typical of this province. It is north to south trending, exhibiting east to west tensional features and complex faulting.

With an elevation relief of 2,832 feet, this 7,712-foot-high range displays over 20,000 feet of geologic strata. Of this strata, more than 19,000 feet are Paleozoic, ranging in age from late Mississippian to Permian.

Tertiary volcanics (mostly andesite flows) occur in the southern part of the range. Small amounts of basalt also occur in the WSA.

The range is basically an asymmetrical anticline with the axis trending north and south. The Cedar Mountains WSA lies between two faults, with the north and south ends of the WSA closely bounded by transverse faults.

Soils

This WSA is covered by only one soil association (Lithic Xerollic Calciorthids Lithic Calcixerolls Rock Outcrop). It consists of well drained, steep to very steep foothills and mountain slopes, and shallow, very gravelly loam to very cobbly loam. About 20 percent of this area is rock outcrop.

The WSA is covered by erosion classes as shown in Table 2. Most erosion problems are due to geologic erosion rather than man-caused.

Reclamation potential for areas disturbed by mining or other uses is limited in these soil types. Soils are shallow and rocky, and the climate is dry. Reclamation potentials and needs vary, depending on the site.

Table 2
Erosion Condition

Classification	Annual Soil Loss per Acre (cubic yards/ acre)	Acres	Percent of WSA	Total Annual Soil Loss for WSA (cubic yards)
Severe	5.4	2,525	5	13,635
Critical	2.7	5,555	11	14,999
Moderate	1.3	19,695	39	25,604
Slight	0.6	9,090	18	5,454
Stable	0.3	13,635	27	4,091
Total		50,500	100	63,783

Sources: USDA, SCS, 1980; Leifeste, 1978.

Vegetation Including Special Status Species

Surrounded by the Great Salt Lake Desert environment, the Cedar Mountains exhibit semiarid climatic and vegetation patterns. Along the foothills, extending from mud and alkaline soils to approximately the 5,200-foot level, exists a vegetation type characterized by the presence of salt-tolerant horsebrush, shadscale, and greasewood. A thin understory of pickleweed, cheatgrass, and halogeton provide additional ground cover.

Above the 5,200-foot level is the juniper transition zone. It is dominated by big sagebrush, rabbitbrush, Mormon tea, black sagebrush, bluebunch wheatgrass, and occasional juniper trees. The upper slopes, ridges, and mountain tops are almost exclusively vegetated by a mixture of bluebunch wheatgrass and juniper. Pinyon pine is not present in the WSA.

Table 3 indicates acreages and percentages of existing vegetation types within the WSA.

Table 3
Existing Vegetation Types

Existing Vegetation Types	Acres	Percent of WSA
Desert Shrub	9,090	18
Juniper	30,300	60
Barren (Rock outcrops, badlands)	11,110	22
Total	50,500	100

Source: USDI, BLM, 1982a

The Cedar Mountains WSA is in the Intermountain Sagebrush Province Ecoregion as shown on the Bailey-Kuchler ecosystems map (USDI, USGS, 1978). The PNV type of the WSA is juniper-pinyon woodland.

No riparian vegetation exists in the unit. Unique ecological communities are absent as well. Threatened, endangered, or other special status plant species have not been found in the WSA (see Appendix 4 in Volume I for details).

Water Resources

Quincy Spring is the only perennial water source found in the vicinity of the WSA. It is cherry-stemmed out of the WSA, along with an associated road and private section of land (T. 3 S., R. 10 W., sec. 16).

No other perennial streams or springs are located in the area. All water sources are intermittent and consist almost totally of spring snowmelt and summer thunderstorms. Three small seeps were found northeast of the summit by inventory crews in the spring of 1980. All three seeps were revisited in August of the same year, and all were dry.

Groundwater might exist beneath the WSA but no drilling has been done to prove this assumption. If exploration is undertaken, drilling would probably be located on alluvial fans outside the WSA boundary.

Irrigation use of the existing water resource is nonexistent. Potential well development is better suited to alluvial fans located below the WSA boundaries. Water rights have not been filed for the seeps mentioned above.

No other water sources are known and, consequently, no other water rights have been filed in the Cedar Mountains WSA.

Mineral and Energy Resources

The mineral and energy resource rating summary for the Cedar Mountains WSA is given in Table 4. Refer to Appendix 5 in Volume I for a detailed description of the SAI rating system.

The WSA could contain deposits of copper and silver that are currently listed as strategic and critical materials (USDoD, 1988). Although listed as strategic, copper is relatively common. Supplies currently exceed domestic demand.

Table 4
Mineral and Energy Resource Rating Summary

Resource	Rating: Favorability[a]	Rating: Certainty[b]	Estimated Resource
Oil and Gas	f 2	c1	Less than 10 million barrels of oil; less than 60 million cubic feet of gas
Phosphate	f 4	c4	About 220 million metric tons
Copper	f 2	c1	Less than 50,000 metric tons of concentrate
Uranium	f 2	c1	Less than 500 metric tons of uranium oxide
Geothermal	f 2	c1	Low temperature
Gold	f 2	c2	Less than 100,000 troy oz
Silver	f 2	c1	Less than 500,000 troy oz
Aragonite	f 2	c4	

Source: SAI, 1982; USDI, BLM, 1987d.

[a]Favorability of the WSA's geologic environment for a resource (f1 = lowest favorability or smallest size deposit and f4 = highest favorability or largest size deposit).

[b]Degree of certainty that the resource does or does not exist within the WSA (c1 = lowest and c4 = highest).

- Leasable Minerals

  - Oil and Gas

Geophysical exploration for oil and gas comprises the only current leasable mineral activity within the WSA. There are no existing oil and gas leases.

Oil and gas favorability is for possible discoveries in small, scattered pools (f2), but the area is not within an established oil and gas province, and a very low (c1) degree of certainty exists. The resource is estimated to be less than 10 million barrels of oil and less than 60 million cubic feet of natural gas.

  - Phosphate

There is one known leasable mineral deposit within the Cedar Mountains WSA. Until recently, two sections (T. 1 S., R. 10 W., sec. 36 and T. 27 S., R. 10 W., sec. 2) were leased for phosphate from the State of Utah. These leases were terminated voluntarily in April 1982. Phosphate prospecting permits were issued in the late 1960s on several hundred acres of Federal land within the area of the WSA. These permits were dropped prior to 1971. The deposit is the phosphate beds in the Meade Peak Member of the Phosphoria Formation. Approximately 14,000 acres of the WSA are underlain by this phosphate. It is estimated that there is phosphate resource of about 220 million metric tons in-place and approximately 130 million metric tons recoverable. Based on these field measurements and resource estimates, favorability for a large deposit (f4) is estimated with a high degree of certainty (c4). However, these phosphate beds are not considered commercially productive at this time.

  - Geothermal

There are no geothermal leases in this WSA. There is only one known source of geothermal water in the vicinity of the WSA, which is known as Redlum Spring. The temperature is about 70 degrees F. No post-Tertiary volcanism or tectonism has occurred in or near the WSA. The thermal waters in the vicinity of the Cedar Mountains are most likely of meteoric rather than magmatic origin. The general area is favorable for low temperature geothermal resources (f2). However, there are no direct data available to support or refute the existence of that resource in the WSA, and so a low degree of certainty (c1) is assigned.

- Locatable Minerals

There are two unpatented mining claims within the WSA; both are pre-FLPMA.

  - Aragonite

There is one known deposit of a locatable mineral within the Cedar Mountains WSA. It is a small deposit of aragonite located in T. 1 S., R. 10 W., sec. 35. The mining claims currently on file are for this decorative stone. There is an alternate aragonite source, however. The Hastings Pass area, north of the WSA, has been a site of aragonite production since the 1890s. The potential of future aragonite production is probably greater along the Hastings Pass Road than within the WSA boundaries. There are several additional deposits of aragonite adjacent to the WSA boundary, including Utah Calcium Products' main mine. Mineral favorability is rated as f2 and certainty is rated as c4.

  - Uranium

A very low certainty (c1) exists for a geologic environment containing small uranium deposits (f2).

- Copper

The same extensive fractures and faulting creating the calcite veining described in Aragonite above, may indicate a favorable geologic environment for mineralizing fluids within the carbonate host rocks. The WSA is within the Bingham-Ely copper province (Tooker, 1980). Due to the host rocks, the fractures, the tertiary heat source, the mineral province location, and mineral deposit models, the WSA is rated as favorable (f2) for small deposits of copper (less than 50,000 metric tons contained metal). No visible copper alteration was seen during a BLM reconnaissance survey in 1983-1984, so a very low certainty value exists (c1).

- Gold

Because of the reasons stated above, as well as known disseminated gold deposits in similar geologic environments in Nevada, there is a favorability for small deposits (f2, less than 100,000 troy oz). Based on industry comments, recent disseminated exploration (although no assays were reviewed) and modeling indications, the certainty degree has been upgraded to low (c2) (USDI, BLM, 1987).

- Silver

Based on the discussions above, there is a favorability for small silver deposits (f2, less than 500,000 troy oz) with a very low degree of certainty (c1).

- Salable Minerals

Salable mineral materials within the WSA include high quality deposits of sand and gravel. There are no established material sites within the WSA. The potential for the use of salable minerals is low because of the widespread occurrence of the same materials outside WSA boundaries. One possible exception could be the columnar basalt at Tabby's Peak. Because of the lack of this basalt elsewhere in Tooele County, there is moderate sale potential. However, no interest in this material has been expressed and the demand is low. An alternate source of this building stone at Moroni's Post Pile is within the Dugway Proving Grounds military withdrawal and unavailable for sale.

Silica sands occur along the eastern and western borders of the WSA. Further analysis is needed to determine if the resource is of industrial quality.

Wildlife Including Special Status Species

Based on habitat analysis, there are approximately 137 species of wildlife which could occur in the Cedar Mountains WSA. Of these, there are 83 species of birds, 37 species of mammals, and 17 species of reptiles.

Of the 137 species referred to above, eight are considered game species. The only migratory game bird is the mourning dove. Small game species include chukar partridge, mountain cottontail, desert cottontail, and pygmy cottontail. A transient mountain lion may occasionally range onto the Cedar Mountains, but no resident population is known to inhabit the WSA. The mountain lion is considered a small game species.

There are two big game species in the WSA, pronghorn antelope and mule deer. A few antelope migrate in and out of the WSA, while approximately 300 deer inhabit the entire Cedar Mountain range yearlong.

Several species of furbearers occur within the WSA, the bobcat being the only game species.

Many raptor species use the WSA either for hunting or for nesting activities. These include but are not limited to the great horned owl, ferruginous hawk, red-tailed hawk, and prairie falcon. Both the golden eagle (a BLM sensitive species) and the bald eagle (an endangered species) are found in this WSA. The golden eagle nests in the area and is considered a yearlong resident. The bald eagle is considered a migrant and is found in or along the Cedar Mountain Range from November through March. It is the only threatened or endangered species of wildlife known to occur in the Cedar Mountains.

Eight Category 2 candidate species could occur in the WSA. These are the ferruginous hawk, long-billed curlew, Swainson's hawk, western snowy plover, white-faced ibis, western yellow-billed cuckoo, the spotted bat, and the Skull Valley pocket gopher. With the exception of the spotted bat and the Skull Valley pocket gopher, these species are birds that frequent areas throughout the Great Basin and other parts of the western United States. (Refer to Appendix 4 in Volume I for details.)

CEDAR MOUNTAINS WSA

No crucial or critical acres of habitat have been identified in this WSA. There are no vegetation improvement projects (or any other projects such as wildlife management facilities) planned for the WSA, and potential for such projects is low.

Forest Resources

Juniper is the only woodland species present in the Cedar Mountains WSA.

Approximately 60 percent or 30,300 acres of the 50,500-acre unit is in canopy or scattered juniper overstory. Crown density varies from 1 to 75 percent, with the majority of the WSA showing an open, poorly vegetated topography. The juniper woodland on the Cedar Mountains WSA is too isolated to provide an accessible, economically feasible product. Firewood and fence posts, the only two woodland items that might be cut, are more plentiful and more accessible in designated cutting areas 15 to 30 miles south and east of the Cedar Mountains. BLM has not issued permits for any woodland products in this WSA or along the bordering foothills.

Livestock and Wild Horses/Burros

A total of 3,293 AUMs are estimated in portions of three grazing allotments are found in the Cedar Mountains WSA. Grazing use data are shown on Table 5.

Unsuitable grazing land makes up a part of all three allotments. Land classified as unsuitable is primarily the steep, poorly vegetated uplands and rocky southern sloped that lack water in the hot summer months and many lack access in the snowbound winter months.

There are no other range developments located within or planned for this WSA. Livestock operators use motorized vehicles to manage livestock on the ways in the WSA. Sheep camps have been established at several locations throughout the WSA. Vehicles are frequently used to access and supply these camps throughout the grazing seasons.

APHIS conducts predator control in the BLM grazing allotments that comprise the WSA. A total of 16 coyotes were taken in the allotments in and surrounding the WSA during 1986 and 1987 (USDA, APHIS, 1988). Seven were taken from aircraft, six by denning, and three by trap or snare. The WSA comprises between 6 and 17 percent of any one allotment. It is not known what proportion of the coyotes were actually taken within the WSA. The combined confirmed livestock losses for 1986 and 1987 in these allotments were five sheep and one lamb. The lamb was killed by a golden eagle. An unrecorded number of additional losses were reported by livestock operators.

Table 5
Livestock Grazing Use Data

Allotments	Total Acres	Acres in WSA	Total AUMs	Number of AUMs in WSA	Number and Kind of Livestock	Season of Use	Number of Operators
North Cedar Mountain	56,224	3,550	5,916	272	450 Cattle 3,200 Sheep	11/01-04/30	1
Aragonite	16,050	2,400	1,546	166	150 Cattle 2,493 Sheep	11/01-04/30	2
Skull Valley	227,200	44,550	17,785	2,855	2,085 Cattle 5,000 Sheep	11/01-04/30	2
Total	299,474	50,500	25,247	3,293			5

Sources: BLM File Data.

There are presently an estimated 200 head of wild horses in the Cedar Mountains WSA. The home range for the majority of these horses is outside of the WSA, south of Rydalch Pass. As one travels north from Rydalch Pass and enters deeper into the WSA, less evidence of wild horses is found. Stud piles, bedding grounds, and routes to available water become less distinct, eventually fading into game trails or native vegetation. It is estimated that 20 head of wild horses, utilizing all three allotments and approximately 120 AUMs of forage, live and remain in the WSA during the summer months. The horses winter near Orr Springs on the boundary of the Dugway Proving Grounds south of the WSA.

The horses tend to use established migration routes throughout the Cedar Mountains and move primarily along the ridges in a north to south direction. There have been sightings of horses along the foothills on both the east and west sides of the range and as far north as Hastings Pass, the northern boundary of the WSA.

Visual Resources

Scenic quality is Class B on 11,840 acres and Class C on 38,660 acres. The topography consists primarily of smooth hills with some rock outcrops. The main vegetative types are grass, desert shrub, and juniper. The east side of the main north to south ridge (rated as Class B quality) has some interesting and unusual rock formations; Tabby Peak, a pyramid-shaped peak of volcanic rock, provides some interesting textures and color contrasts.

Most of the area is rated as BLM VRM Class IV. The area along the east side of the main ridge is VRM Class III. The VRM system is explained in Appendix 7 in Volume I. Table 6 shows acres and percentages of VRM classes in the WSA.

Cultural Resources

A total of 17 archaeological sites have been recorded in the WSA (USDI, BLM, 1988). Except for two, one historic site of unknown age and one Fremont-style petroglyph, all sites are lithic scatters situated on sand dunes in the foothills at 4,700 to 5,400 feet in elevation. More than half of these sites contain diagnostic artifacts such as metates, milling stones, bifaces, and points. One site is Archaic in age and one is associated with Fremont occupation. Four of the sites contain buried strata and are considered to be eligible for nomination to the National Register of Historic Places.

Table 6
Visual Resource Quality and Management Class

Element		Acres	Percent of WSA
Scenic Quality Class A		0	0
Scenic Quality Class B		11,840	23
Scenic Quality Class C		38,660	77
	Total	50,500	100
Management Class I		0	0
Management Class II		0	0
Management Class III		9,920	20
Management Class IV		40,580	80
	Total	50,500	100

Source: USDI, BLM, 1982a

Historically, a number of explorers and California-bound travelers passed along the northern boundary of the WSA through Hastings Pass. The best known of these were Fremont's Third Expedition in 1845 and the Donner-Reed party in 1846. There is no trace of their passage through the WSA, but their trail is still visible across parts of the salt desert to the northwest.

A total of six inventories have been conducted within the boundaries of the WSA and a total of 1,605 acres representing approximately 3 percent of the unit have been intensively surveyed (USDI, BLM, 1988). Seven quarter-sections (6, 13, 15, 17, 23, 24, and 26) were intensively surveyed as part of a 1 percent random sampling for the Lakeside/Skull Valley planning area. Two of the randomly selected quarter sections contained archaeological sites. A fire rehabilitation survey identified eight sites in the northern portion of the WSA while the remaining inventories recorded no cultural resources. A linear survey bisects the southern portion of the WSA, however, most of the high elevations of the unit remain largely unexamined. Using the information from these inventories, a site density of approximately 172 sites per 23,000 acres was computed. The potential for finding additional sites, especially in the foothill sand dune deposits, is very high.

Recreation

The entire WSA is currently open to ORV use. A total of 18 miles of jeep trails and ways lie within the WSA boundary on BLM lands. These ways are generally short spur routes in the canyon drainages close to

the boundary of the WSA. The longest of these ways penetrates about 3 miles into the WSA (Wild Cat Canyon). A total of 11 separate access routes provide access to all but the north end of the WSA.

The few recreationists who explore the interior of the WSA are primarily engaged in horseback riding, hiking, geological study, or hunting. Once inside the unit, the isolation promotes primitive recreational experiences.

Documented use statistics have been estimated from field interviews with recreationists along the boundary road. Upper portions of the roadless areas of the WSA received an estimated annual use of 82 visits, which accounts for some 27 visitor days of primitive-type use per year. An additional 357 visitor days per year are associated with ORV use along areas where jeep trails and ways exist. A total of 384 annual visitor days are estimated for a typical year. Prior to wilderness interim management, ORV groups expressed interest in use of the area for organized off-road events.

Land Use Plans

The majority of the Cedar Mountains WSA consists of public land, managed under the BLM Tooele Planning Area MFP (USDI, BLM, 1984c). Wilderness is not addressed in the Tooele MFP. Wilderness designation is part of the BLM multiple-use concept. The BLM land use plan is linked to the Statewide Wilderness EIS through inclusion of the present plan as the No Action/No Wilderness Alternative.

The current policy of the State of Utah is to maximize economic returns from State lands and to reserve its position regarding exchange of in-held lands. The Utah State Legislature passed S.C.R. No. 1 in 1986 opposing any additional wilderness designation in Utah and urging that State lands not be exchanged out of wilderness areas.

There are no existing rights-of-way on BLM-administered land within the WSA. Future rights-of-way will be needed in connection with access rights to the private and State in-holdings. Access to mining claims and private or State in-holdings must be allowed under provisions of law. No specific plans have been identified for the in-held private surface. They are presently used for livestock grazing.

Tooele County has a County Master Plan, 1970 to 1990 (Mountain Area Planners, 1972), but it is not specifically directed to the Cedar Mountains WSA. Land use in Tooele County is generally discussed throughout the Master Plan as encouraging multiple and cooperative use. The plan states:

> "The major part of unincorporated land in Tooele County is shown on the Master Plan Maps as multiple-use areas. It is proposed that these lands be subject to conditional use permits for all uses; that primary uses allowed be forestry, stock grazing, mining, and recreational activities in appropriate areas; that emphasis of management practices be placed on conservation and wise use of natural resources, to permit and encourage improvement in soils stability, plant cover, water quantity and quality, and scenic beauty."

The Tooele County Commission has endorsed the Consolidated Local Government Response to Wilderness, which opposes wilderness designation of BLM lands in Utah. According to the Tooele County Commission, wilderness designation would be in direct conflict with the Tooele County Master Plan and current zoning designation, which was developed and adopted long before any wilderness proposals were considered.

The Cedar Mountains WSA is in the South Range of the USAF's Utah Test and Training Range. The USAF's position is that low level military overflights of the Utah Test and Training Range, including the Cedar Mountains WSA, would continue regardless of wilderness designation (USAF, 1986).

Socioeconomics

- Demographics

The population within a 25-mile radius of the Cedar Mountains WSA is concentrated entirely within the boundaries of Tooele County and localized in three valleys surrounding the Cedar and Stansbury Mountain ranges. From 1960 to 1980, the population of Tooele County grew from 17,868 to 26,200, an overall increase of about 45 percent and an average annual increase of over 2.28 percent. Table 7 presents baseline and projected population data for Tooele County. It is estimated that between 1980 and 1987, population increased to about 28,600. Population projections for the county indicate that the number of people living in Tooele County in the year 2010 will be about 42,700 for about a 69 percent increase over 1980 levels (University of Utah, BEBR, 1987).

The population of Tooele county is heavily concentrated (about 85 percent) in Tooele Valley, or that northeastern corner of the county referred to on the table as the Tooele-Grantsville Division. This area is 30 to 50 miles southeast of the Cedar Mountains WSA. The remaining 15 percent of Tooele County's population is scattered throughout the county.

Table 7
Baseline and Projected Population and Employment Growth
Tooele County

	1980	1990	2000	2010
Population	26,200	30,000	35,000	42,700
Employment	10,649	12,200	14,300	16,600

Source: Utah Office of Planning and Budget, 1987.

The population density of Tooele County is about 3.76 people per square mile. Population centers within about 100 miles of the Cedar Mountains WSA include Salt Lake City-Ogden and Provo-Orem, with a combined population of approximately 1,155,000.

- Employment

Table 8 shows the baseline and projected total employment for Tooele County to the year 2010.

Military installations are the largest employers in the county. The Tooele Army Depot accounts for more than 50 percent of total nonagricultural employment in the county. Farm employment represents a very small percentage (less than 2 percent) of the county employment and income (University of Utah, BEBR, 1979). Mining employment in the county has been declining in recent years.

Tooele County is part of the Wasatch Front MCD. Table 8 shows the baseline (1980) and projected employment by source for the MCD to the year 2010. In 1980 the leading employment sectors for the Wasatch Front MCD were trade (23 percent), government (20 percent), and services (17 percent). Mining provided approximately 2 percent of the direct employment in the MCD which includes large operations such as the Kennecott Copper Mine. It is projected that by the year 2010 employment in the MCD will double, Trade will increase to 24 percent and services to 22 percent of the total. Government will decline to 15 percent and mining to 1 percent of the total.

- Sales and Revenues

Table 8 shows representative income for nonfarm activities in Tooele County. Farm-related income for the county totals about $3 million per year (University of Utah, BEBR, 1979).

Table 8
Wasatch Front Multi-County District
Employment[a]

	1980	1990	2000	2010
Agriculture	5,315	5,600	5,700	5,900
Mining	7,122	3,000	3,400	3,900
Construction	21,608	26,500	35,600	45,600
Manufacturing	60,121	70,600	91,900	115,300
Transportation, Utilities	26,989	33,100	42,000	51,600
Trade	95,989	126,400	161,200	200,300
Finance, Insurance, Real Estate	20,770	30,800	39,000	48,900
Services	71,019	116,500	155,300	189,400
Government	86,017	103,800	111,800	127,600
Nonfarm Proprietors	26,016	35,100	42,600	55,200
Totals	422,875	551,400	688,500	843,700

Source: Utah Office of Planning and Budget, 1987.

[a]Includes Davis, Morgan, Salt Lake, Tooele, and Weber Counties.

Economic-related activities in Cedar Mountains WSA include mineral exploration, livestock production, and recreation sectors of Tooele County's economy.

Mineral resources in Tooele County include limestone, metallic minerals, potassium salts, clays, and sand and gravel. In 1983, the latest year for which dollar value statistics are available, Tooele County produced $37 million worth of nonfuel minerals (University of Utah, BEBR, 1987).

There are no noncompetitive oil and gas leases in the WSA, and no Federal revenues are generated. No oil or mineral extraction has occurred in the WSA. Therefore, mineral and energy resource production from the WSA has not contributed to local employment or income.

The WSA has two mining claims. Regulations require a $100 annual expenditure per claim for labor and improvements, an undetermined part of which is spent in the local economy. Mineral production or mine development in the Cedar Mountains WSA is limited to a single, sometimes active, aragonite mining operation working along the WSA's northeast boundary. The mine is not presently producing but assessment work is being continued.

Five stockmen seasonally graze cattle and sheep on 3,293 AUMs scattered across the three grazing allotments found in the WSA. At the current fee of $1.54 per AUM these five ranchers pay $5,071 per year in Federal revenue to graze their stock within the WSA boundaries. Marketing of livestock which use the WSA contributes to local income. About $65,860 of livestock sales and $16,465 in ranchers' return on investment and labor is attributed to the AUMs in the WSA.

Woodland products are not presently being taken from the unit; therefore, no revenue is generated from this resource.

Recreation has not proven to be a significant income producer. Deer hunting, ORV use, and horseback riding account for 98 percent of the low use in the WSA. Revenue generated by the sale of hunting licenses to people specifically hunting this WSA is considered insignificant. The actual amount of income generated locally from recreational use in the WSA is unknown. However, an approximate range of expenditures can be deduced (Dalton, 1982). This study indicates that the Statewide average local expenditures per recreational visitor day for all types of recreation in Utah are approximately $4.10. The recreational use for Cedar Mountains is estimated at about 384 visitor days per year, resulting in a total estimated annual local expenditure of $1,575 related to the WSA.

Table 9 shows current sales and revenues for the WSA.

Table 9
Local Sales and Federal Revenues

Source	Annual Local Sales[a]	Annual Federal Revenues
Oil and Gas Leases	0	0
Mining Claim Assessment	$ 200	0
Livestock Grazing	$ 65,860	$ 5,701
Woodland Products	0	0
Recreational Use	$ 1,575	0
Total	$ 67,635	$ 5,701

Sources: BLM File Data; Appendix 9 In Volume I.

[a]Local sales represent money potentially spent. They do not account for the total local income that would be generated by these expenditures.

ENVIRONMENTAL CONSEQUENCES OF ALTERNATIVES

No Action/No Wilderness Alternative (Proposed Action)

- Impacts on Wilderness Values

If not designated wilderness, the wilderness values in the future would not receive protection afforded by application of the Wilderness Management Policy (BLM Manual 8560). However, in the foreseeable future, no developments are anticipated that would affect wilderness values.

The only use that would conflict with wilderness values in the foreseeable future is ORV activity. Much of the WSA can be accessed by vehicles on the 18 miles of ways and 11 access corridors. New trails formed by ORV use, including possible ORV events, would reduce naturalness wherever they are developed throughout the WSA. Sights and sounds of vehicle activity would result in the reduction of opportunities for solitude and primitive recreation in areas throughout the WSA during the period of use. These opportunities are not considered outstanding except for outstanding solitude on about 10 percent (5,280 acres) of the area. The degree to which increased vehicle activity would affect special features, including wild horse, bald eagle. and other sensitive animal species use of the area is unknown. It is, however, unlikely that vehicular use would ever increase to a level that would significantly reduce wildlife populations.

Overflights by military aircraft would also continue to be an occasional annoyance that would detract from the opportunities for solitude and primitive recreation in the WSA.

Disturbance that would occur over the long term and, therefore, the long-term loss of wilderness values that would occur is not accurately known. Loss would occur as intrusions increase.

Conclusion: Wilderness values would not be protected by wilderness designation. In the foreseeable future, naturalness and opportunities for solitude and primitive recreation would be reduced in scattered areas as ORV use increases. Special features would not be significantly affected.

• Impacts on Livestock Management

Present livestock use and related access could continue without regard for wilderness values. No additional range improvements are proposed. There would be no significant changes in or effect on the current livestock use and management under this alternative. Domestic livestock grazing would continue as authorized in the Tooele MFP or current planning document. The 3,293 AUMs in the WSA are currently allocated to five livestock permittees.

The 18 miles of ways and 11 corridors in the WSA would be available for unrestricted motorized access for support of livestock management. Livestock operators would continue to use these ways. Although none are planned, additional roads or other facilities for livestock handling could be proposed and developed in the future without regard for wilderness values. Few, if any, changes in livestock management techniques are expected.

Predator control would continue under State of Utah and APHIS guidelines. Approved methods of control would be used without concern for wilderness values.

Conclusion: The No Action/No Wilderness Alternative would not adversely affect livestock management.

• Impacts on Cultural Resources

The cultural resources in the WSA would continue to receive protection under the National Historic Preservation Act and other regulations. No surface disturbance is expected; however, inventories for the purpose of site recordation and mitigation of impacts would occur prior to any surface disturbance if proposed. Even with mitigation, inadvertent loss or damage could occur in disturbed areas. In addition, secondary impacts in the form of artifact collection or vandalism could occur due to increased activity and accessibility in the region (Nickens et al., 1981).

The WSA is currently open to ORV use and will continue to be open under this alternative. There is little actual ORV activity in the unit at present, especially at the northern end. However, most ORV activity will be confined to the foothills where the majority of sites have been found situated on sand dunes or buried within them. Sand dune deposits are unconsolidated. The dunes and any sites associated with them would be quickly eroded by ORV activity. In addition, open ORV use will provide some vehicular access to the unit's interior; thus, increasing artifact collection and vandalism opportunities (Nickens et al., 1981).

Under this alternative archaeological sites would be subject to standard cultural resource management procedures (Neumann and Reinburg, 1988). Stabilization, interpretation, and excavation could proceed without the restrictions of wilderness protection.

Conclusion: Inadvertent loss or damage may occur. Continued ORV use would cause unintentional damage to sites and would increase accessibility to many sites in the WSA. Cultural resource management would proceed without wilderness designation restrictions.

• Impacts on Recreation

Over the short term, recreation use of the WSA would continue with present uses and trends. Based on a review of several projections (UDNRE, ORA, 1980; UDNRE, DPR, 1985; Utah Office of Planning and Budget, 1984; Jungst, 1978; Hof and Kaiser, 1981; and Cordell and Hendee, 1982), it is estimated that outdoor recreation in Utah will increase at about 2 to 7 percent per year over the foreseeable future (32 years). At this rate, overall recreational use is expected to increase from 384 current visitor days per year to between 720 and 3,300 by the year 2020. Based on current projected use, recreational activities utilizing vehicular access (hunting, sightseeing, and ORV use), would increase from 357 to between 670 and 3,100 visitor days per year. The 18 miles of ways in 11 locations would remain open for public use and new access routes could be developed as ORV use increases. The quality of and opportunity for primitive recreational opportunities would be reduced.

Conclusion: ORV use would increase, reducing opportunities for primitive recreation throughout the WSA.

All Wilderness Alternative (50,500 Acres)

• Impacts on Wilderness Values

With this alternative, the potential for surface-disturbing activities that could impair wilderness values would be reduced through management under VRM Class I (which generally allows for only natural ecological change), through ORV closure, and through closure of the entire area to future mineral leasing and location. Overall, wilderness values in the Cedar Mountains WSA which include about 50,000 acres of

naturalness, about 5,280 acres of outstanding opportunities for solitude, and such special features as the wild horse herd and the existence of bald and golden eagles and other sensitive animal species would be protected by wilderness designation.

With this alternative no impacts to wilderness values would be expected in the foreseeable future from mineral or other development or from ORV activity. Enforcement of the ORV closure would, however, impose an administrative and management burden on BLM because of the need to sign, block, and patrol the 18 miles of ways and the 11 access corridors that provide motorized access not only on the area's periphery, but also to the higher benchlands and interior. The problem would slowly dissipate over time as people become aware and accustomed to the closure.

Overflights by military aircraft would continue to be an occasional annoyance that would detract from opportunities for solitude and primitive recreation in the WSA.

Conclusion: Wilderness values would be preserved.

- Impacts on Livestock Management

Present domestic livestock grazing would continue as authorized in accordance with the Tooele MFP. The 3,293 AUMs currently allocated in the WSA are used by sheep and cattle owned by five livestock permittees. Some limitations on vehicular use may occur, and sheep camps may not have ready access. This could inconvenience the permittee and result in increased costs of management. Predator control would be restricted, and increases in sheep losses to predators would result.

Because the WSA includes only 17 percent or less of any one grazing allotment and restricted access and some predator control would be allowed, only minor changes in livestock management practices or increases in predation would result.

Conclusion: Restrictions on access and predator control would be an inconvenience to livestock permittees and could increase management costs and sheep losses to predators.

- Impacts on Cultural Resources

All 50,500 acres would be closed to ORV use. This would eliminate inadvertent damage to cultural resources resulting from ORV play. In addition, restriction of ORV use would limit vehicular accessibility in the WSA, thus, indirectly protecting archaeological sites from intentional vandalism and artifact collection (Nickens et al., 1981). Approximately 13 miles of roads bordering the WSA would remain open to all types of vehicular use. Most of the recorded sites are located 100 to 400 meters from roads; thus, this alternative may offer little protection of the WSA's recorded sites from vehicular access and related artifact collection and vandalism.

As recreational use of the unit increases, site vandalism and collection of small transportable objects may increase. However, because of the lack of vehicular access collection of large artifacts and illegal excavation of sites may decrease. If sites containing valuable artifacts are present in the WSA, the increased inaccessibility of wilderness designation may encourage commercial looting. However, no such sites are currently recorded in the WSA. The protection of cultural resources from ORV use and surface development would probably outweigh any increases in vandalism due to wilderness designation and increased recreational use.

All cultural resource management procedures will be subject to the restrictions of wilderness designation (Neumann and Reinburg, 1988). Access to sites for stabilization, interpretation, or excavation may be limited or denied.

Conclusion: Surface disturbance will be minimal and will probably outweigh increased vandalism due to wilderness designation. Closure to ORV activity will protect sites from unintentional damage (especially those located in sand dunes) and generally decrease accessibility. Sites located near existing roads would not be protected from vandalism. Cultural resource management may be restricted in scope and execution.

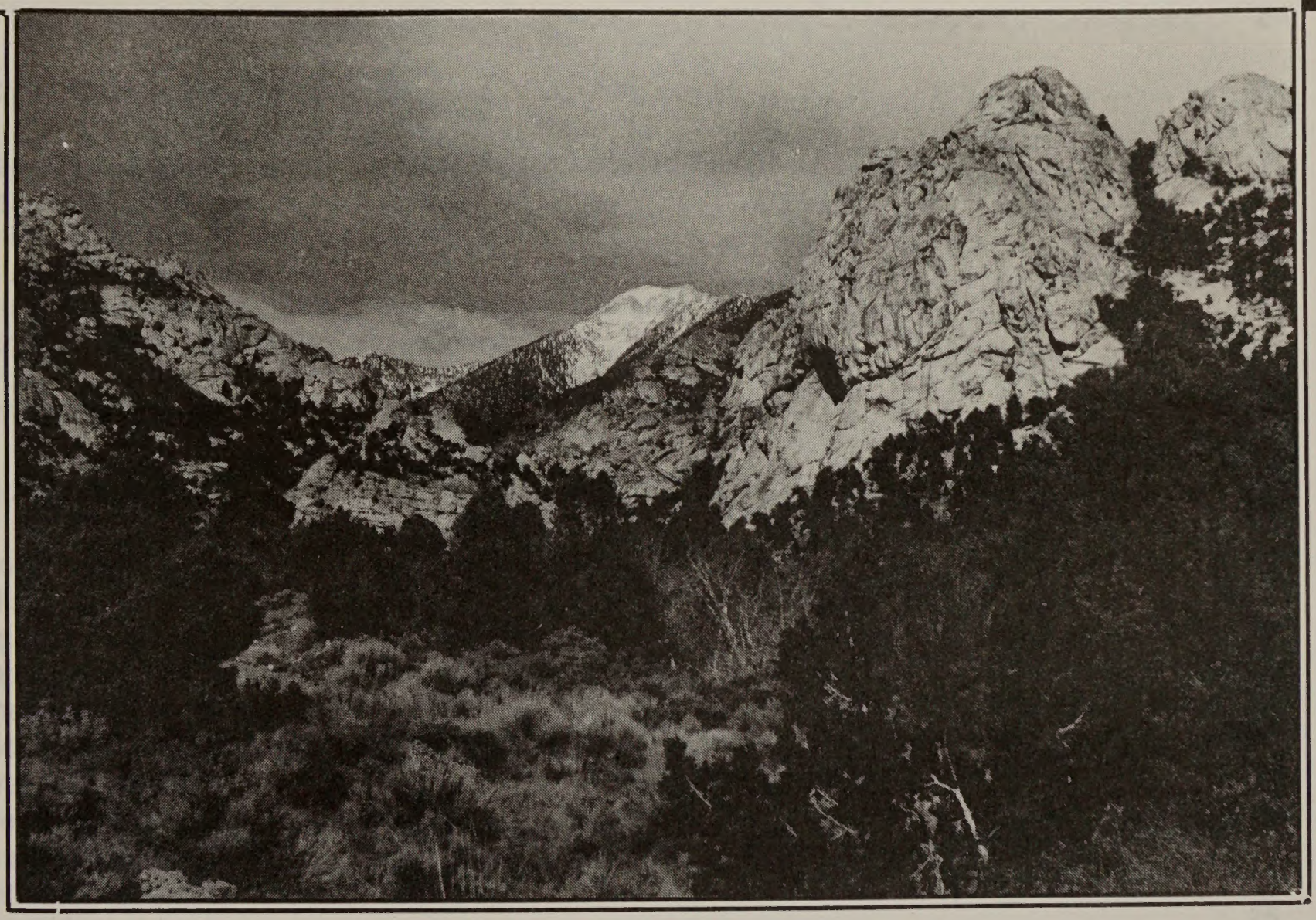
- Impacts on Recreation

Primitive recreation use in Utah is estimated to increase about 2 to 7 percent per year over the foreseeable future in relation to population increases and current trends of recreation use. The current and potential visitor days of ORV recreation and/or vehicle-related hunting use of the WSA that would occur without designation would be eliminated. It is unlikely that increases in primitive recreation use would offset losses in vehicle-related use, and in the foreseeable future, overall recreational use would decline in the WSA. Because there are other suitable

areas for ORV recreation in the general vicinity of the WSA, ORV use would probably not experience an overall decline in the region.

Conclusion: Opportunities for primitive recreation would be preserved. Opportunities for ORV use would be lost, but losses would not be significant on a regional basis.

Deep Creek Mountains WSA



DEEP CREEK MOUNTAINS WSA

TABLE OF CONTENTS

INTRODUCTION 1

General Description of the Area 1
Changes for the Final EIS 1
Specific Issues Identified Through Scoping and Public Comment 2
Issues Considered But Not Analyzed in Detail 2
Issues Analyzed in Detail 2

DESCRIPTION OF THE ALTERNATIVES 3

Alternatives Considered and Eliminated from Detailed Study 3
Alternatives Analyzed 3
No Action/No Wilderness Alternative 3
All Wilderness Alternative 7
Partial Wilderness Alternative (Proposed Action) 8
Summary of Environmental Consequences 13

AFFECTED ENVIRONMENT 16

Wilderness Values 16
Air Quality 17
Geology and Topography 18
Soils 18
Vegetation Including Special Status Species 18
Water Resources 19
Mineral and Energy Resources 20
Wildlife Including Special Status Species 22
Forest Resources 23
Livestock and Wild Horses/Burros 23
Visual Resources 24
Cultural Resources 24
Recreation 25
Land Use Plans 25
Socioeconomics 26

ENVIRONMENTAL CONSEQUENCES OF ALTERNATIVES 28

No Action/No Wilderness Alternative 28
All Wilderness Alternative 31
Partial Wilderness Alternative (Proposed Action) 35

DEEP CREEK MOUNTAINS WSA

(UT-020-060)

INTRODUCTION

General Description of the Area

The Deep Creek Mountains WSA consists of 68,910 acres of public land in southwestern Tooele County and northwestern Juab County, Utah. About 38,170 acres of the WSA are in Tooele County and 30,740 acres are in Juab County. The WSA is about 80 miles from the community of Tooele in Tooele County and about 90 miles from Nephi in Juab County. The Nevada border is about 6 miles to the west of the WSA.

The Deep Creek Mountains rise over 8,000 feet above the desert valley floor to elevations in excess of 12,000 feet and are characterized by sheer granite cliffs and glacial cirques at the higher elevations. There is an abundance of plant and animal species. Vegetation types include sagebrush, pinyon-juniper woodland, and montane forest. Wildlife species include mule deer, bighorn sheep, and many kinds of birds. There are two endangered species and seven sensitive species of wildlife that may be found in the WSA.

Precipitation in the Deep Creek Range averages about 16 inches at lower elevations to over 25 inches on the higher slopes. There are precipitation peaks during the late summer due to thunderstorms. Temperature distributions have been recorded at Ibapah (elevation 5,280 feet). Seasonal extremes in temperature range from a low winter recording of -39 degrees Fahrenheit (F) to a summer high of 106 degrees F.

Changes for the Final EIS

In addition to the changes noted in the Introduction to Volume II, the following changes specific to the WSA have been made since publication of the Draft EIS.

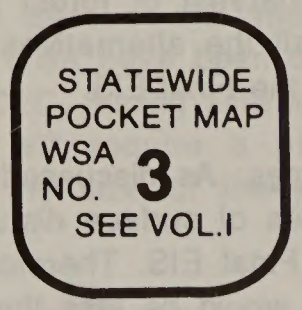
1. Small sections of the boundary of the WSA have been redrawn to correct errors in the Draft EIS maps. These changes did not require acreage adjustments because acreage calculations were based on the boundaries as shown in the inventory document and Final EIS.

2. The descriptions of the No Action/No Wilderness and Partial Wilderness alternatives have been revised to coincide with the House Range Resource Management Plan (RMP) which has replaced the West Desert MFP since publication of the Draft EIS. The main feature of the RMP is establishment of an Area of Critical Environmental Concern (ACEC) in the Juab County portion of the WSA.

3. The Partial Wilderness Alternative (BLM Proposed Action) analyzed in the Final EIS would designate 6,400 acres more than the Partial Wilderness Alternative presented in the Draft EIS. The partial has been expanded along the north and east boundaries to more closely coincide with the boundaries of mineralized areas.

4. The anticipated surface disturbance presented in the Draft EIS (1,546 acres) was based on the assumption that all mineral and other resources potentially within the WSA would be developed sometime in the future without consideration of technical or economic feasibility. In response to public comments relative to the feasibility of developments, the disturbance estimates have been revised to focus on activities projected to be feasible within the foreseeable future (see Appendix 6 in Volume I). This resulted in a reduction of surface disturbance estimates from the 1,546 acres reported in the Draft EIS to 86 acres of surface disturbance for the Final EIS.

5. The planned 500 acre chaining reported in the Draft EIS has been dropped from consideration by BLM and is not addressed in the Final EIS. An additional spring development project has been proposed since publication of the Draft, and is addressed in the Final EIS.



DEEP CREEK MOUNTAINS WSA

Specific Issues Identified Through Scoping and Public Comment

• Issues Considered But Not Analyzed in Detail

In addition to the issues discussed and eliminated from further consideration in the Introduction to Volume II (i.e., impacts on air quality, geology and topography, soils, water rights, and land use plans and policies), the following issues or impacts specific to the Deep Creek Mountains WSA were considered but are not analyzed in detail in the Final EIS for the following reasons.

1. Vegetation Including Special Status Species: Estimates of total surface disturbance without wilderness designation have been revised downward from the 1,546 acres reported in the Draft EIS to 86 acres in the Final EIS. Given this new scenario, the impacts of direct disturbance of vegetation would be reduced and would not be significant with any of the alternatives (less than 0.1 percent of the WSA). There are no threatened, endangered, or proposed threatened or endangered plant species known to occur within the WSA. In any event, BLM would conduct site-specific clearances of potentially disturbed areas and consult with FWS concerning impacts on threatened or endangered plant species. Therefore, impacts on vegetation are not analyzed in detail for the Deep Creek Mountains WSA. Unique plant species such as bristlecone pine are recognized and analyzed as special features in the Wilderness Values sections of the Final EIS.

2. Forest Resources: The 4,900 acres of commercial quality coniferous woodland in the WSA would produce about 500,000 board feet of lumber; however, only about 25,000 board feet are presently accessible. No commercial permits have been issued for firewood or posts and noncommercial pinyon-juniper harvest has been outside the WSA. Since publication of the Draft EIS, the BLM House Range RMP has closed the area to commercial timber harvest. Therefore, the impacts on harvest of forest products would be precluded with all the alternatives and are not analyzed in detail in the Final EIS.

3. Visual Resources: As discussed above for vegetation, the estimates of surface disturbance have been reduced for the Final EIS. Therefore, the impacts on visual resources would be less than described in the Draft EIS. In the Final EIS, impacts on visual resources are not addressed under the heading of "Visual Resources," but are addressed as part of the discussion of naturalness in the Wilderness Values sections.

4. Cultural Resources: As discussed in the Draft EIS, cultural resources could be destroyed by surface-disturbing activities. However, there are only 12 recorded sites in the Deep Creek Mountains WSA (none of National Register quality), and surface disturbance estimated for the No Action/No Wilderness Alternative has been reduced from 1,546 acres to 86 acres for the Final EIS. Dispersed disturbance from ORVs is prevented by the steep terrain in the WSA.

In addition, inventories for the purpose of site recordation and mitigation of impacts would take place prior to any surface disturbance. Given these conditions, impacts on cultural resources are not significant issues for analysis in the Final EIS.

• Issues Analyzed in Detail

The significant issues for the Deep Creek Mountains WSA are:

1. Impacts on the wilderness values of naturalness, opportunities for solitude and primitive recreation, and special features.

2. Impacts on water resources including water uses and quality.

3. Impacts on mineral and energy exploration and production.

4. Impacts on wildlife habitat and populations including special status species.

5. Impacts on livestock management, including vehicle access and predator control.

6. Impacts on recreational use including tradeoffs between vehicle based and primitive recreation.

7. Impacts on local economic conditions.

Comments made during the public comment period for the Draft EIS addressed a variety of topics and centered mainly on the inventory phase of the wilderness review and questions on BLM's assessment of the value of wilderness versus other resource and scientific values and the affects of BLM's proposed action on wilderness values and wildlife, including opportunities to provide habitat for the sensitive Bonneville cutthroat trout.

DEEP CREEK MOUNTAINS WSA

See Volume VII-B for responses to general comments applicable to all WSAs and/or the Statewide analysis, and Volume VII-C, Section 3, for responses to specific comments about the Deep Creek Mountains WSA.

DESCRIPTION OF THE ALTERNATIVES

Alternatives Considered and Eliminated from Detailed Study

During scoping, it was suggested that an alternative be prepared to cover only areas with no resource conflicts. Review of this suggestion led to the conclusion that resource conflicts can be minimized but not completely eliminated in the Deep Creek Mountains WSA; therefore, the objective of the alternative suggested would not be fully attainable. A partial alternative is included that reduces potential mineral conflicts.

Also, an alternative was suggested to include only lands above 7,000 feet in elevation. BLM did not identify significant new information or conflict resolution that would result from such an alternative; therefore, it was eliminated from detailed study.

Alternatives that would add acreage, mainly in the Basin and along the southwestern border of the WSA while deleting other small areas (net addition of about 7,090 acres) were suggested by the public during the public comment period.

The Basin is private land and cannot be included in the wilderness study. Public lands outside the WSA boundary were considered and found ineligible for wilderness study during the inventory phase of the Wilderness Review and are not analyzed in the Final EIS. The proposed deletions would not result in impacts appreciably different from the Partial Wilderness Alternative analyzed in the Final EIS and offer no major distribution between the alternatives analyzed.

Alternatives Analyzed

Three alternatives are analyzed for this WSA: (1) No Action/No Wilderness; (2) All Wilderness (68,910 acres); and (3) Partial Wilderness (Proposed Action) (57,384 acres).

A description of BLM's management practices under each alternative follows. Where management intentions have not been clearly identified, assumptions are made based on management projections. These assumptions are indicated in each case. The assumed BLM management actions presented in the Introduction to Volume II are also applicable.

- No Action/No Wilderness Alternative

With this alternative, none of the 68,910 acres in the Deep Creek Mountains WSA would be designated by Congress as part of the NWPS. Although BLM's land use plans are regularly updated it is assumed that the area would continue to be managed in accordance with the Tooele Planning Area MFP (USDI, BLM, 1984c) and the House Range Resource Area RMP (USDI, BLM, 1987c) and subsequent activity plans. In the Juab County (southern) part of the WSA, 30,740 acres would continue to be managed as an ACEC, outstanding natural area. The restrictions imposed by ACEC management are described below.

The in-held State and private lands within the WSA (refer to Map 1 and Appendix 3 in Volume I) have not been identified in the land use plans for special Federal acquisition through exchange or purchase. State in-held and private lands are analyzed as remaining under existing ownership. The figures and acreages given are for Federal lands only.

- Management Conditions and Constraints

Approximately 65,320 acres would remain open to mineral location and sale. Development work, extraction, and patenting would be allowed on 295 existing mining claims (1,420 acres) and potential future mining claims (5,900 acres). Development would be regulated by unnecessary or undue degradation guidelines (43 CFR 3809) without wilderness considerations. Exploration and development of locatable minerals is expected because of known mineral values (see Appendix 6 in Volume I).

The 43 CFR 3809 regulations normally require an approved plan of operation only for projects over 5 acres in size. Because the lands in Juab County located in the WSA have been designated by the RMP as an ACEC, mining activities in that portion of the WSA, will require a plan of operation regardless of the size of the potential disturbance.

There are no oil and gas leases in the WSA. New leases could be developed under stipulations issued at the time of lease issuance. The area would be managed under Category 4 (closed to leasing) on about 14,997 acres and Category 3

(no surface occupancy) on 37,741 acres. The remaining 16,172 acres would be managed as Category 1 (standard stipulations). All of the Category 1 lands are in the Tooele County (northern) portion of the WSA. Although leasable minerals would be managed as described, leasable mineral exploration and/or development are not expected because the level of known resources and their probability of development are too low to support a development assumption. See Appendix 6 in Volume I for details regarding mineral and energy resources exploration and development projections.

The present domestic livestock grazing use of the 68,910 acre area of the WSA would continue as authorized in the land use plans at an estimated 1,209 AUMs. New rangeland developments could be implemented without wilderness considerations. Redevelopment of Trough Spring and construction of a water pipeline and development of Birch Springs are planned.

About 3,827 acres of public lands would continue to be managed as public water reserves that are segregated from public land law and mining of nonmetalliferous minerals. These reserves are in isolated parcels around Trough, Willow, and Cold Springs and in Choke Cherry and Pole Canyons. Large parcels are located in the Thoms, Trout Creek, Birch Creek and Granite Creek Canyon drainages. The BLM House Range RMP further restricts activities on 3,590 acres of these public water reserves in Juab County by closing them to location of mining claims.

Bighorn sheep were reintroduced to the WSA in 1984. This activity would continue to be allowed. Planned wildlife habitat developments include five spring projects and one reservoir, about 240 stream and bank stabilization structures (made from hand-placed logs) in the streams of the WSA, and hand-thinning of approximately 200 acres of aspen in two locations.

The present 52,600 acres of ORV closure would remain in effect. Approximately 10 of the 15 miles of existing ways and jeep trails would remain open to vehicular use. Access to private land in-holdings (256 acres) would continue to be allowed.

The entire 68,910-acre area would continue to be open only to harvest of certain forest woodland products, such as pine nuts, firewood, and fenceposts. Significant noncommercial harvest is not expected because of distance to market areas and limited access.

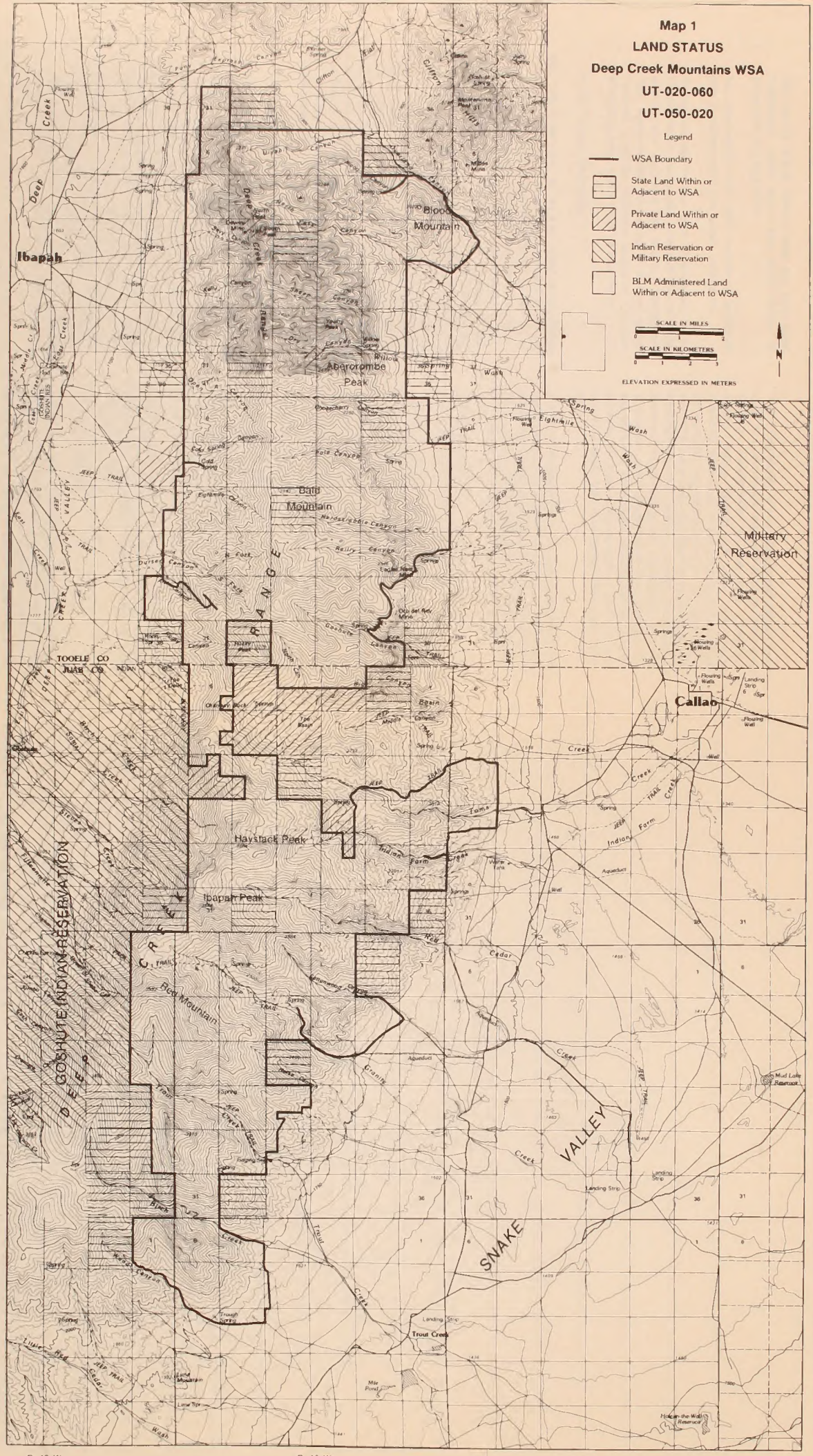
The area would continue to be managed under VRM Class II on 42,180 acres, Class III on 16,730 acres, and Class IV on 10,000 acres.

- Action Scenario

Given BLM management actions described above and the resources described in the Affected Environment section, BLM anticipates that implementation of the No Action/No Wilderness Alternative would result in approximately 86 acres of surface disturbance in the foreseeable future. Planned rangeland and wildlife habitat improvement projects including a reservoir, a buried small-diameter water pipeline, and seven spring developments would disturb a total of 8 acres. These developments would be located adjacent to existing roads and would not require additional road construction. It is estimated that disturbance associated with spring and pipeline developments would be reclaimed within 2 years and that the reservoir would be in place over the long term and would require maintenance once every 20 years.

About 23 acres of mineral-related disturbance would occur in the eastern part of T. 9 S., R. 18 W., as a result of continuing mining claim operations in and near the Willow Springs and Clifton Mining Districts. New roads would not be required in this area. An additional 51 acres of surface disturbance would occur in the northernmost portion of the WSA due to exploratory drilling and construction of approximately 4 miles of new roads. Based on similar operations in the vicinity of the WSA, it is projected that mining operations would require a maximum of 20 employees at any one time. About 4 acres of surface disturbance would result from up to 2 miles of access road construction to an in-held State section in the WSA located in the area of assumed mineral development (T. 9 S., R. 18 W., sec. 32).

The mining operations would be underground and developed under the unnecessary and undue degradation guidelines of 43 CFR 3809 regulations. It is likely that developed claims would be patented and


Map 1
LAND STATUS
Deep Creek Mountains WSA
UT-020-060
UT-050-020
Legend
WSA Boundary
State Land Within or Adjacent to WSA
Private Land Within or Adjacent to WSA
Indian Reservation or Military Reservation
BLM Administered Land Within or Adjacent to WSA
SCALE IN MILES
SCALE IN KILOMETERS
ELEVATION EXPRESSED IN METERS
N
Ibapah
Blood Mountain
Aberrombe Peak
Bald Mountain
Haystack Peak
Ibapah Peak
Red Mountain
Callao
Military Reservation
GOSHUTE INDIAN RESERVATION
SNAKE VALLEY
Trout Creek
DEEP CREEK RANGE
TOOELE CO
JUAB CO
T. 9 S.
T. 10 S.
T. 11 S.
T. 12 S.
T. 13 S.
R. 19 W.
R. 18 W.
R. 17 W.

disturbance would remain over the long term. Exploration roads would also likely remain in place over the long term.

No disturbance from ORV activity is projected due to management and terrain constraints.

Recreation use in the WSA is projected to increase above the current estimated use of 5,600 annual visitor days at a rate of 2 to 7 percent per year. Approximately 63 percent of the use would continue to involve vehicular access on 10 miles of existing ways and 4 miles of new roads.

- All Wilderness Alternative

With this alternative, all 68,910 acres of the Deep Creek Mountains WSA would be designated by an act of Congress as part of the NWPS (refer to Map 2). It would be managed in accordance with the BLM Wilderness Management Policy (BLM Manual 8560) to preserve its wilderness character. The policy of the State of Utah is to reserve its position regarding exchange of in-held lands within any particular WSA (see Chapter 1 in Volume I). Based on this policy regarding exchange of State lands, and provisions of BLM's Wilderness Management Guidelines regarding private lands, it is assumed that State and private lands would remain under existing ownership. Five State sections (3,207.8 acres) and three tracts totaling 256 acres of private land are within the WSA (see Map 3, and Appendix 3 in Volume I). The figures and acreages given under this alternative are for Federal lands only.

- Management Conditions and Constraints

After wilderness designation, all 68,910 acres would be withdrawn from mineral location and closed to new mineral leasing and sale. Development work, extraction, and patenting would be allowed to continue on that portion of the approximately 5,900 acres of existing mining claims that may be determined to be valid. Development would be regulated by unnecessary or undue degradation guidelines (43 CFR 3809), with concern for wilderness values. Mineral exploration and development are expected following designation because valid claims may be found in the WSA. There are no oil and gas leases in the WSA and new leases would not be issued. Therefore, no leasable mineral activities would occur following designation.

The 1,209 AUMs in the WSA would remain available to livestock as presently allotted. After designation, maintenance of one partly developed spring (Trough Spring) with pipes and troughs would be allowed as in the past, based on practical necessity and reasonableness. No areas within the WSA have been identified for future rangeland developments for livestock, except for redevelopment of Trough Spring with the addition of 1 mile of pipeline and development of Birch Springs. It is assumed that the planned pipeline and spring developments would be designed and installed in a manner consistent with wilderness protection criteria.

A short (0.2 mile) buried pipeline in the WSA has been proposed in connection with two small hydroelectric projects planned adjacent to the WSA. A rights-of-way for the pipeline has been granted and assumed that the pipeline would be built.

Public water reserves on 3,827 acres of public land in the WSA would be maintained.

The entire 68,910-acre area would be closed to ORV use except for users with valid existing rights if approved by BLM in accordance with 43 CFR 8560 provisions. About 15 miles of existing vehicular ways and jeep trails would not be available for vehicular use except as indicated above. About 8 miles (approximately 10 percent) of the WSA boundary follow existing gravel and dirt roads that would remain open to vehicular travel. Short segments of five existing roads, totaling about 4 miles, would be cherry-stemmed, would dead end into the WSA, and would be open to vehicles. These segments are at the edge of the WSA near Granite Creek, Indian Farm Creek, Overland Canyon, Cold Spring Canyon, and Arts Canyon. Access to 256 acres of private land in-holdings (three locations) would be allowed.

Visual resources on all 68,910 acres would be managed in accordance with VRM Class I standards, which generally allow for only natural ecological change.

- Action Scenario

Given the BLM management actions described above and the resources described in the Affected Environment sections, BLM projects that overall, 36 acres of the WSA would be disturbed in the

foreseeable future with this alternative. Locatable mineral exploration and development work would be restricted to existing, valid claims at the time of wilderness designation. Because potentially valid claims are found in the WSA, it is projected that 26 acres of surface disturbance would result from locatable mineral-related activities in the areas described in the No Action/No Wilderness Alternative. In addition, 4 acres of disturbance are projected for 2 miles of access road construction to in-held State land.

The mining operations would be developed under the unnecessary and undue degradation guidelines of the 43 CFR 3809 regulations. It is likely that developed claims would be patented and disturbance would remain over the long term.

Approximately 6 acres of surface disturbance would result from the rangeland and wildlife habitat improvement projects. It is estimated that the disturbance associated with the spring and pipeline developments would be reclaimed within a 2-year period.

No disturbance is projected from ORV activity due to management and terrain constraints.

Recreation use in the WSA is projected to eventually increase above the 5,600 annual visitor days of current use at a rate of 2 to 7 percent per year. Use may initially decrease because vehicles would no longer be used for access.

- Partial Wilderness Alternative (Proposed Action) (57,384 acres)

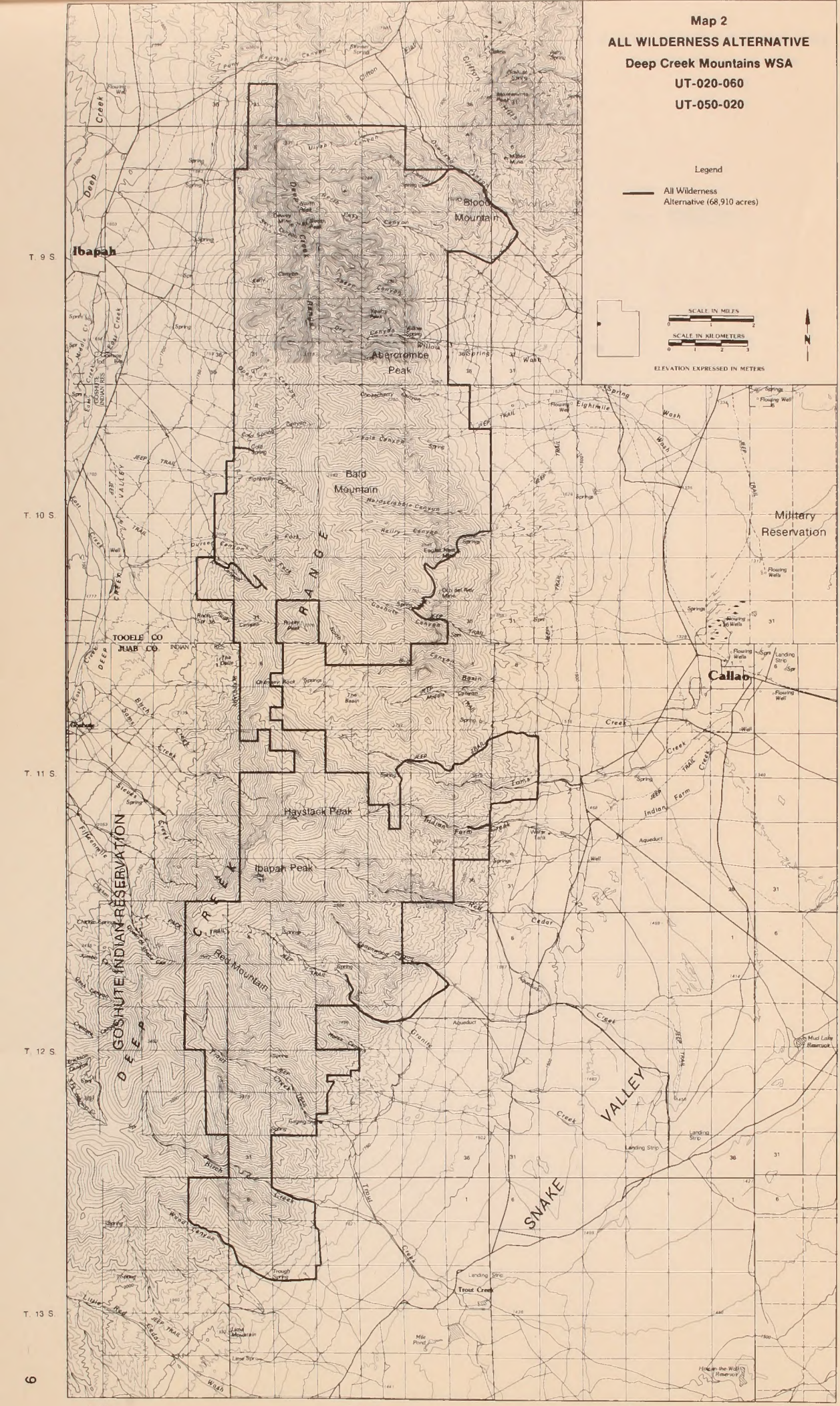
With this alternative, 57,384 acres of the Deep Creek Mountains WSA would be designated as wilderness (refer to Map 3). The designated area would include about 28,260 acres in Tooele County and 29,124 acres in Juab County. The objective of this alternative is to minimize conflict between wilderness designation and potential mineral exploration and development (see Appendix 11 in Volume I). The 57,384 acres analyzed as wilderness under this alternative include most of the southern part and about three-fourths of the northern part of the WSA. This generally includes the steepest and most mountainous portion of the WSA. The 11,526 acre area (north and northeast side and four small areas along the southeast side) within the WSA, but outside of that designated as wilderness, would be managed in accordance with the current Tooele MFP and House Range RMP, as described for the No Action/No Wilderness Alternative. The 57,384 acre area designated as wilderness would be managed in accordance with the BLM Wilderness Management Policy (BLM Manual 8560) as described in the All Wilderness Alternative.

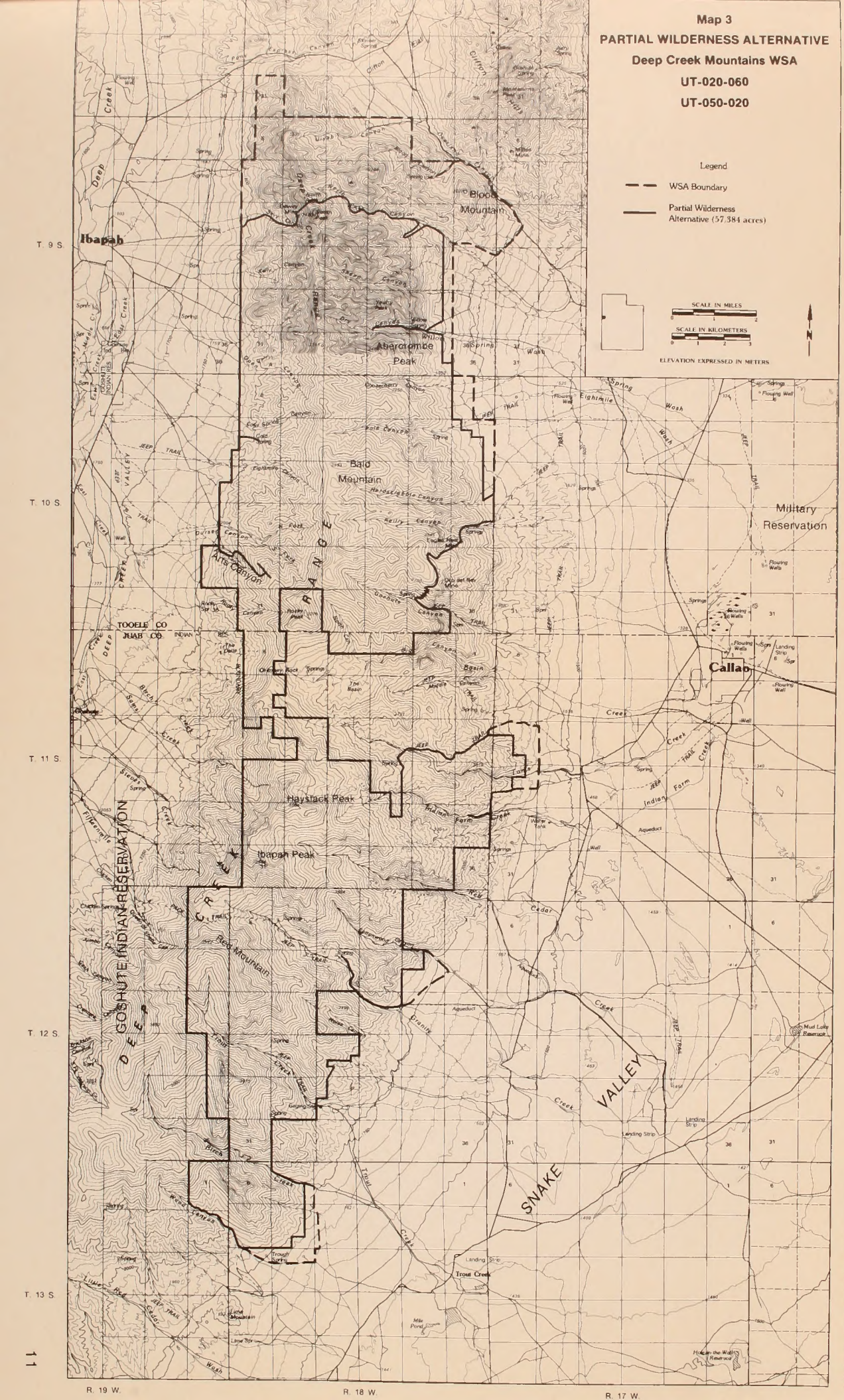
The policy of the Stateof Utah is to reserve its position regarding exchange of in-held lands within any particular WSA (see Chapter 1 in Volume I). Based on this policy regarding exchange of State lands, and provisions of BLM's Wilderness Management Guidelines regarding private lands, it is projected that State and private lands would remain under existing ownership. There are 3,208 acres in five sections of State land in the portion of the WSA that would be designated, as well as 135 acres of private land in two parcels. The figures and acreages described for this alternative are for Federal lands only.

- Management Conditions and Constraints

The 57,384 acre wilderness would be withdrawn from mineral entry and closed to new mineral leasing (Category 4) and sale. In the 57,384-acre area, development work, extraction, and patenting would be allowed to continue on 2,280 acres in 114 existing mining claims provided that they are valid. There are no existing oil and gas leases in the WSA. New leases would not be issued in the designated portion. The 11,526-acre area not designated wilderness would be open to future mineral location, leasing, and sale. Development work, extraction, and patenting of 181 existing mining claims (3,620 acres) and future mining claims could occur in the 11,526-acre area. The area not designated would be managed as leasing Category 1 (standard stipulations). Development of future leases could occur without concern for wilderness values. Locatable mineral activities related to existing mining claims are expected in both the designated and nondesignated areas because there are known mineral resources. Leasable mineral development is not projected in the WSA because the level of known resources and the probability of their development are too low to support a development assumption (see Appendix 6 in Volume I).

Domestic livestock grazing would continue to occur in the 57,384-acre wilderness area. The AUMs in the 57,384-acre area would remain available to livestock as presently allotted (approximately 994 AUMs). It is projected that the proposed Birch Springs development would be


Map 2
ALL WILDERNESS ALTERNATIVE
Deep Creek Mountains WSA
UT-020-060
UT-050-020
Legend
All Wilderness Alternative (68,910 acres)
SCALE IN MILES
SCALE IN KILOMETERS
ELEVATION EXPRESSED IN METERS
Ibapah
Blood Mountain
Abercrombe Peak
Bald Mountain
DEEP CREEK RANGE
Haystack Peak
Ibapah Peak
Red Mountain
GOSHUTE INDIAN RESERVATION
Callao
Military Reservation
SNAKE VALLEY
Trout Creek
T. 9 S.
T. 10 S.
T. 11 S.
T. 12 S.
T. 13 S.
R. 19 W.
R. 18 W.
R. 17 W.


Map 3
PARTIAL WILDERNESS ALTERNATIVE
Deep Creek Mountains WSA
UT-020-060
UT-050-020
Legend
WSA Boundary
Partial Wilderness Alternative (57,384 acres)
SCALE IN MILES
SCALE IN KILOMETERS
ELEVATION EXPRESSED IN METERS
N
T. 9 S.
T. 10 S.
T. 11 S.
T. 12 S.
T. 13 S.
R. 19 W.
R. 18 W.
R. 17 W.
Ibapah
Blood Mountain
Abercrombe Peak
Bald Mountain
Military Reservation
Callao
Haystack Peak
Ibapah Peak
Red Mountain
Trout Creek
DEEP CREEK RANGE
GOSHUTE INDIAN RESERVATION
SNAKE VALLEY
TOOELE CO
JUAB CO

designed and installed in the wilderness area consistent with wilderness protection standards. In the 11,526-acre nonwilderness area, grazing use would continue as authorized in the MFP (an estimated 215 AUMs). Trough Springs would be redeveloped without concern for wilderness values.

A short buried water pipeline associated with small hydroelectric projects, as described in the All Wilderness Alternative, would be constructed within the area designated as wilderness in this Partial Wilderness Alternative.

Planned wildlife developments in the 57,384 acre area include one spring, 210 stream and bank stabilization structures, and hand-thinning of aspen in two locations. The spring project and maintenance of the stream stabilization features would be designed and installed consistent with wilderness protection standards. In the remaining 11,526-acre area, four spring developments and a planned reservoir would be allowed without concern for wilderness values.

The mountains and canyons that would comprise the 57,384-acre wilderness would be closed to ORV use. Short segments of four existing roads, totaling about 3 miles, would be cherry-stemmed and would provide vehicular access near Granite Creek, Indian Farm Creek, Gold Spring Canyon, and Arts Canyon. Access to about 135 acres (two locations) of private land in-holdings would be allowed. About 8.5 miles of existing open ways and jeep trails would not be available for vehicular use except in situations described under the All Wilderness Alternative. The 11,526 acres not designated in the WSA would be open to ORV use. The 5 miles of ways and jeep trails in the Juab County portion of the WSA would be closed and not available for use. ORV use would be physically restricted to existing roads and ways by terrain and surface features.

Harvest of forest products in the 57,384 acres of wilderness would not be allowed except for harvest of pine nuts or noncommercial gathering of dead-and-down wood, if accomplished by other than mechanical means. The remaining 11,526 acres would be open to harvest of woodland products such as pine nuts, noncommercial firewood, and fenceposts. Forest-woodland product harvesting is not expected because of distance to market areas and limited access.

Visual resources on the 57,384-acre wilderness would be managed in accordance with VRM Class I standards, which generally allow for only natural ecological change. The remaining 11,526 acres would be managed as Class II on 700 acres, Class III on 2,526 acres, and Class IV on 8,300 acres.

- Action Scenario

Implementation of the Partial Wilderness Alternative would result in a total of 85 acres of surface disturbance. It is projected that 20 acres of disturbance would occur in the designated portion of the WSA, and that 65 acres would be disturbed in the nondesignated portion.

In the designated portion of the WSA, 18 acres would be disturbed as a result of continued locatable mining operations in and near the Willow Springs and Clifton Mining Districts located in the northeastern portion of the WSA and for access to in-held State land as previously discussed. Two acres of surface disturbance associated with rangeland and wildlife habitat projects (two spring developments) are projected in the designated portion.

In the nondesignated portion of the WSA, 5 acres of surface disturbance would result from rangeland and wildlife habitat improvements, and 60 acres of disturbance would result from locatable mineral activities. Rangeland and wildlife habitat projects would include five spring developments, a buried small-diameter water pipeline, and one reservoir. The majority of surface disturbance resulting from locatable mineral activities would take place in the extreme northern portion of the WSA, as described for the No Action/No Wilderness Alternative.

No disturbance from ORV activity is projected due to management and terrain constraints.

Recreation use in the WSA is projected to eventually increase above the current estimated 5,600 annual visitor days at a rate of 2 to 7 percent per year. Initially, use may decrease because vehicle use would not be allowed in the designated area.

Summary of Environmental Consequences

Table 1 summarizes the environmental consequences of the alternatives analyzed in detail.

DEEP CREEK MOUNTAINS WSA

Table 1
Summary of Environmental Consequences

Resource	Alternatives		
	No Action/No Wilderness	All Wilderness (68,910 Acres)	Partial Wilderness (57,384 Acres) (Proposed Action)
Impacts on Wilderness Values	Wilderness values would not be protected by wilderness designation and loss would occur as intrusions increase. In the foreseeable future, naturalness and opportunities for solitude and primitive recreation would be directly lost on 86 acres, and opportunities for solitude and primitive recreation would be indirectly reduced in quality on up to 13,782 acres due to mining operations and rangeland projects. Vehicular use of about 10 miles of ways would continue to detract from opportunities for solitude and primitive recreation. Special features would not be significantly affected.	Wilderness values would be preserved overall. In the foreseeable future, naturalness and opportunities for solitude and primitive recreation would be directly lost on 36 acres and opportunities for solitude and primitive recreation would be indirectly reduced in quality on up to 6,891 acres, due to mining operations and rangeland projects. Special features would be preserved.	Wilderness values would be preserved overall in the designated area which is about 80 percent of the WSA. Naturalness and opportunities for solitude and primitive recreation would be directly lost on 85 acres of the WSA, and opportunities for solitude and primitive recreation would be indirectly reduced in quality on up to 13,782 acres, due to mining operations and rangeland projects. Vehicular use of 1.5 miles of ways would continue to detract from opportunities for solitude and primitive recreation. Special features would be preserved.
Impacts on Water Resources	Water quality would not be affected because mitigation would be required and developments would not be in the vicinity of perennial streams. Water use would not be affected because any developments could be implemented without wilderness considerations.	Water quality or uses would not be affected because proposed and projected developments would be compatible with wilderness management or the perennial streams that headwater in the WSA.	Water quality or uses would not be affected because pro-posed and projected developments would be compatible with wilderness management or the perennial streams that headwater in the WSA.
Impacts on Mineral and Energy Exploration and Production	Mineral and energy exploration would not be adversely affected. Portions of the WSA would be open to exploration and development of mineral and energy resources.	Exploration and development of locatable minerals would be limited and production of significant locatable minerals would be foregone. Loss of leasable mineral production would not be significant because of low probability of development.	This alternative would not significantly adversely affect mineral and energy exploration and development because most of the known mineralization would be in the nondes-ignated area.

DEEP CREEK MOUNTAINS WSA

Table 1 (Continued)
Summary of Environmental Consequences

Resource	Alternatives		
	No Action/No Wilderness	All Wilderness (68,910 Acres)	Partial Wilderness (57,384 Acres) (Proposed Action)
Impacts on Wildlife Habitat and Populations	Less than 1 percent (86 acres) of wildlife habitat in the WSA would be affected. Wildlife populations would not be significantly reduced.	Wildlife habitat would be lost on less than 1 percent (36 acres) of the WSA. Populations would not be significantly reduced. Big game and other species would be protected.	Effects would be the same as for the No Action/No Wilderness Alternative.
Impacts on Livestock Management	Livestock grazing would not be affected.	Changes in livestock management would inconvenience 17 livestock permittees. There would be a slight increase in predation on livestock.	Livestock grazing would be about the same as for the All Wilderness Alternative because 82 percent of the forage, 0.50 mile of the existing ways, and all 17 permittees would be affected.
Impacts on Recreation	The quality of primitive recreation would not be protected. Both primitive and motorized recreation use would increase.	The quality of primitive recreation would be protected throughout the WSA. Vehicular use would be eliminated. Overall, recreational use may initially decrease but would eventually increase above existing levels.	The quality of primitive recreation would be protected in the designated area. Future recreational use would be mostly primitive in nature. Recreation use may initially decrease but would eventually increase above existing levels.
Impacts on Economic Conditions	Local and regional economic conditions would not be significantly affected. Recreation-related expenditures would contribute to the local economy.	Wilderness designation would not significantly affect local economic conditions because significant changes are not expected in population, employment, and income. Recreation-related expenditures would contribute to the local economy.	Local and regional economic conditions would not be significantly affected. Recreation-related expenditures would contribute to the local economy.

DEEP CREEK MOUNTAINS WSA

AFFECTED ENVIRONMENT

This section describes the overall environmental setting. This information allows for independent assessment by the public as required by the CEQ guidelines and provides a data base for the cumulative Statewide analysis found in Volume I, as well as the environmental consequences of alternatives described in the WSA analysis. Unless otherwise indicated, information for this section was taken from BLM staff specialists, technical reports, and file documents.

Wilderness Values

- Size

The WSA contains approximately 68,910 acres of public land. There are approximately 30,740 acres in Juab County and approximately 38,170 acres in Tooele County. The WSA extends about 28 miles in a north to south direction and varies in width from less than 1 to nearly 7 miles in an east to west direction. It is one of the larger WSAs in the west central area of Utah.

- Naturalness

There are three patented mining claims (private inholdings) in the northern end of the WSA, totaling 256 acres. These tracts have significant surface disturbances. There are numerous mine shafts, tailings, and old mine structures in Reilly, Pole, Chokeberry, North Pass, Sevy, Sheep, and Willow Spring Canyons, Bagley Gulch, and Blood Mountain. The mine workings and adjoining road systems and ways comprise approximately 1,000 acres of surface disturbance inside the WSA. There is a total of about 15 miles of ways and jeep trails extending for short distances up numerous canyons in from the boundary of the WSA. Approximately 5 miles are closed to vehicle use under the RMP. Approximately 10 acres were disturbed by placement of an 8 inch buried water pipeline from Granite Creek. This disturbance has been reclaimed.

The remainder of the WSA is in essentially a natural condition. There are no sights or sounds outside the WSA that would impact naturalness. Overall, the entire 68,910 acres appear to meet the Wilderness Act criteria for naturalness.

- Solitude

Opportunities for recreationists to find solitude (i.e., a secluded spot away from others) within the WSA are influenced by size, topography, vegetation, and the absence of distracting sights and sounds.

The WSA ranges in elevation from approximately 5,000 feet to over 12,000 feet on the higher peaks. The many streams draining to the east have cut narrow, steep-sided canyons. There is a wide variety of vegetation, from pinyon-juniper at the lower elevations to Douglas fir, white fir, and bristlecone pine on the higher ridges. Both topographic and vegetation screening are excellent, and one could easily find seclusion from others in approximately 90 percent of the WSA. Opportunities for solitude in the central portion of the WSA are considered outstanding. Juniper-grassland, comprising approximately 6,546 acres of the WSA, is located along the benchlands or adjacent to the northern boundary, and provides little opportunity for solitude. Opportunities for solitude in these areas are less than outstanding.

The Deep Creek Mountains WSA is within the South Range of the USAF's Utah Test and Training Range. The South Range runs approximately north to south from the southern boundary of the Bonneville Salt Flats to the San Francisco Mountains and east to west from the Sheeprock Mountains to 17 miles within Nevada. This is one of the Nation's busiest military air spaces. There are 15,000 aircraft including all types of tactical fighters and bombers in the area. There are 100 to 150 (conservative estimate) aircraft flights per day over the South Range 6 days per week. Flights occur as low as 100 feet above the ground surface. Speeds are subsonic except in the very northern portion of the test range in the area around Ibapah, where supersonic speeds are also reached. Heaviest use areas are in the northern part of the test range which includes the Deep Creek Mountains WSA (Davies, 1985). Aircraft occasionally fly directly over the WSA, and these overflights can be a source of annoyance to visitors seeking solitude. Most of these overflights are usually not directly over the Deep Creek Mountains WSA, but are supersonic in portions of this area. Military flights are occasional off-site intrusions (sights and sounds) that detract from, but generally do not eliminate, the overall opportunities for solitude.

- Primitive and Unconfined Recreation

A wide variety of recreational opportunities were identified during the BLM Intensive Wilderness Inventory (USDI, BLM, 1980). These included hiking/backpacking, horseback riding, fishing, hunting, nature study, and sightseeing. The availability of water greatly enhances the hiking/backpacking and horseback riding activities and allows the recreationist to spend extended periods of time in this mountain range. Hunting is primarily for deer, mountain lion, and chukar partridge. Huntable populations of antelope and grouse also exist, but numbers are relatively small and probably attract few hunters. Fishing is a supplemental activity engaged in by hikers and campers. There is a variety of nature study opportunities available. Existing possibilities include both biological and botanical observation and specimen collecting. The variety and number of these opportunities allow for recreational experiences of very high quality. Approximately 6,546 acres of the WSA (the open slopes and sagebrush flats at the lower elevations) fail to offer outstanding opportunities for primitive recreation. The remainder of the WSA meets the requirements for primitive recreation set by the Wilderness Act.

- Special Features

Special features identified during the wilderness inventory include Bonneville cutthroat trout, the giant stonefly, grapefern, 12 archaeological sites, and bristlecone pine. Two streams in the Deep Creek Mountains are known to have a pure strain of the Bonneville cutthroat trout (Salmo clarki utah). These trout are a remnant of the trout that once inhabited Lake Bonneville, which covered a large portion of western Utah. The Bonneville cutthroat trout is a Category 2 candidate species. The giant stonefly is found in most of the streams of the Deep Creek Mountains. Although abundant in streams of the Pacific Slope, the stonefly is quite uncommon to the State of Utah.

The grapefern was discovered growing above the 10,000-foot level in Indian Farm Creek Canyon in 1944. This original discovery has not been duplicated. Normally found in the northern part of the United States, it is unusual to find the grapefern this far south.

Twelve archaeological sites were found in the WSA during an inventory in 1976 and 1977. The sites are mostly open lithic and rockshelter sites and indicate semipermanent occupancy by the Archaic Sevier and Paiute-Shoshone cultures.

Three stands of bristlecone pine have been found in the WSA, but the approximate ages of these trees have not yet been determined.

The WSA has other resource values that, although not identified as such during the wilderness inventory, could be considered special features. Two endangered species, the bald eagle and peregrine falcon, and seven sensitive species are found in the area. The WSA has a large variety of wildlife species, including bighorn sheep and cougar that are species associated with wilderness. The WSA has a wide variety of flora. It is the highest block-faulted mountain range in Western Utah and the third highest mountain range in the Great Basin area of the Basin and Range Geographic Province. About 36 percent of the WSA is rated as Class A scenic quality. The high mountain peaks are distinguishing scenic features. So are the streams. In addition, many vantage points occur for views outward to the contrasting desert.

- Diversity

This WSA is in the Intermountain Sagebrush Province Ecoregion and has the PNV types of juniper-pinyon woodland, Western Ponderosa forest, Great Basin sagebrush, and saltbush-greasewood. Refer to the Vegetation Including Special Status Species section for more discussion on ecoregions and PNV types. To see how the ecoregion and PNV types represented by this WSA compare Statewide and nationally with existing and potential National Wilderness Preservation units refer to the Wilderness Values section of Volume I.

This WSA is within a 5-hour drive from three standard metropolitan statistical areas. These are Provo-Orem, Utah; Salt Lake City-Ogden, Utah; and Las Vegas, Nevada.

Air Quality

The Deep Creek Mountains WSA is in a PSD Class II area under the provisions of the Clean Air Act, as amended. The quality of the air is generally good to excellent. The nearest Class I area (extremely limited air quality degradation permitted) is Capitol Reef National Park, 150 miles to the southeast.

Unimpaired visibility is an important value of the WSA. Panoramas of Great Basin block-faulted

mountains rising steeply from sagebrush-covered plains are greatly enhanced by the generally excellent clarity of the air. The WSA is near the center of an area with the highest visual range (70+ miles) in the United States (EPA, 1979).

Geology and Topography

The Deep Creek Range of west-central Utah is the highest, and perhaps the most prominent and unique landmark in western Utah. It is the third highest range in the Great Basin area of the Basin and Range Physiographic Province. The topography of the WSA is characteristic of this province. The Deep Creek Mountains rise steeply above the surrounding valleys, trending generally north-south along blockfaulted planes. Foothills are generally absent, and a sharp contrast exists between mountains and valleys.

Bedrock exposed in the WSA consists mostly of Precambrian sedimentary rocks (some of which are metamorphosed) and Cambrian sedimentary rocks that have been intruded by a large, granitic body of Tertiary age, known as the Ibapah stock. Lower Paleozoic sedimentary rocks are exposed in the northwestern part of the tract, where Tertiary volcanics and dikes also outcrop. The intrusive body has produced mineralization (gold, silver, copper, etc.), but much of the associated mining activity is in the northern half of the range, mostly outside the WSA. Complex structural features, including overturned synclines, tightly folded anticlines, thrust faults, and high-angled faults surround the stock.

The Deep Creek Mountains dominate their geologic setting in altitude and sheer mass. To the north and east of the range stretches the vast, flat Great Salt Lake Desert. To the south and west, beyond the limit of unaided vision, lie scattered mountain ranges. Out of this barren landscape, between alluvial outwash and playa basins with an approximate elevation of 4,000 feet, rises a 30 mile long, 8,000 to 10,000 foot ridgeline that is the Deep Creek Range, topped by two 12,000 foot peaks. The large Ibapah stock underlying the central portions of the WSA contributes to the high rugged topography of the area.

Soils

There are four general soil associations in the WSA. Soil associations vary considerably, depending on elevation, slope, and parent material. The largest portion is moderate to very deep cobbly loams formed in alluvium and residium derived from granites, quartzite, sandstone, and limestone. Other soils are cobbly loams, clay loams, and silt loams developed from domolite, igneous, sedimentary, and limestone material. The entire WSA (68,910 acres) is in the slight erosion condition class which indicates very little erosion activity (0.6 cubic yard per acre annually). Erosion condition class is based on soil surface factors (terms are defined in the Glossary). The current annual soil loss for the WSA is approximately 41,346 cubic yards.

The reclamation potential of the soils in the WSA depends on the particular site, and the nature and extent of the disturbance. Generally, reclamation potential for shallow, cobbly loams is low, while there is good potential for reclamation in areas with deep loams.

Vegetation Including Special Status Species

The Deep Creek Mountains WSA is within the Bonneville Basin Section of the Great Basin Division of the Intermountain Botanical Region (Cronquist, Holmgren, Holmgren, and Reveal, 1972). The WSA is exceptional because it has representatives from several different floras. Plant species from the Snake Range and Pine Valley Mountains to the south and the Utah Plateaus and Wasatch Range to the north and east occur in the Deep Creek Mountains. The major existing vegetation types are summarized in Table 2.

Table 2
Existing Vegetation Types

Existing Vegetation Type	Acres	Percent of WSA
Pinyon-juniper woodland	37,212	54
Conifer forest/Aspen	19,782	28
Sagebrush-grass	8,856	13
Desert shrub	2,756	4
Riparian	304	less than 1
Total	68,910	100

Source: USDI, BLM, 1982a and 1987c

The pinyon-juniper woodland dominates the WSA. This association includes Utah juniper, bluebunch wheatgrass, big sagebrush, and a wide variety of forbs.

The most interesting community present is the montane forest, found on the higher elevations of the south and west slopes. Associated species include white fir, subalpine fir, Engelmann spruce, Douglas fir, and Ponderosa pine, bristlecone, and limber pine. Bristlecone and limber pine occur on ridgetops with some Ponderosa pine scattered among the Douglas and white fir.

A unique ecological component of the WSA is the bristlecone pine. Some of the trees have approached the size and appearance of the trees in California's Methuselah Grove, home of the world's oldest living trees. There are also significant stands of young bristlecone pine that provide the WSA with a self-perpetuating community of significant ecological interest.

The lower slopes and foothills of the WSA are covered by sagebrush and desert shrub communities comprised of sagebrush, shadscale, horsebrush, rabbitbrush, saltbush, winterfat, Mormon tea, snakeweed, cactus, and associated grasses.

There are an estimated 184 acres of riparian vegetation along the seven streams in the southern portion of the WSA. Some 120 acres of additional riparian vegetation are found in the canyons of the northern portion of the WSA (5 miles of canyon bottoms).

No threatened, endangered, or proposed threatened or endangered plant species are known to occur within the WSA. One Category 2 candidate species and two unlisted special status species, Hackelia ibapaensis, Draba kassii, and Sclerocactus pubispinus, are known to occur near the WSA and likely occur inside the WSA.

The Deep Creek Mountains WSA is in the Intermountain Sagebrush Province Ecoregion as shown on the Bailey-Kuchler ecosystems map (USDI, USGS, 1978). The PNV types in the WSA are listed in Table 3.

Table 3
Potential Natural Vegetation Types

PNV Type	Acres	Percent of WSA
Juniper-pinyon woodland	25,000	36
Western Ponderosa forest	23,910	35
Great Basin sagebrush	14,000	20
Saltbrush-greasewood	6,000	9
Total	68,910	100

Source: USDI, USGS, 1978.

Water Resources

The Juab County portion of the Deep Creek Mountains WSA includes seven perennial streams totaling 21 miles inside the WSA. The water quality of these streams is good, and all are used for irrigation downstream in the valleys. Other uses include wildlife, domestic livestock, and small town and ranch culinary use. The springs and streams are classified by the State of Utah as beneficial use Classes 3A and 4 (which protect water quality for cold water fishing and livestock watering). All surface waters on public land in the Deep Creek Mountains were designated as anti-degradation waters. Deep Creek Mountains were determined by the staff of the Bureau of Water Pollution Control to be a low-priority area due to low population and intermittent streams. Data indicate that very little impact to water quality has occurred since the water quality assessment of 1984. All of these creeks are diverted into concrete-lined ditches or concrete pipelines to carry the water across rocky foothills outside the WSA to the farms located in the valley. Of the seven streams, Trout, Birch, Indian Farm, and Thoms Creek cross Indian, private, or State lands upstream of the WSA. The headwaters of these streams are not well suited to installations or diversions that would affect downstream flows. The remainder of the streams all originate in the WSA. However, water originating on Indian lands would be considered as water reserved under the Winter Doctrine for use by the reservation. Since the waters flow east and the reservation is on the west, trans-mountain diversions would be required.

Trough Spring is located at the extreme southern tip of the WSA; the water is of good quality and used primarily by sheep and cattle. Flow is estimated at 20 gallons per minute (gpm).

Water sources are scarce in the Tooele County portion of the Deep Creek Mountains. Only 1 mile of one perennial stream is located in Tooele County. Water from this stream is collected in a valley reservoir and used for irrigation. Four small springs are also located in the Tooele County portion of the WSA. All of these water sources flow freely. None are used for culinary or irrigation purposes. The combined overflow from all four springs (40 gpm maximum) would not fill a streambed or an irrigation ditch for an extended length of time. Within the WSA, only Trough Spring has improvements (pipes, troughs, etc.) in place.

Water flow records and data are available for Trout Creek. Trout Creek is larger than the other streams in the WSA, with the exception of Birch Creek. It is estimated that the flows of Birch Creek are similar to those in Trout Creek which vary from about 0.25 cfs to 177 cfs, with an average discharge of about 6 cfs, for 4,300 acre-feet per year (USGS, 1987). All perennial streams in the WSA are fully appropriated (UDNRE, DWR, 1988).

The water right filings for Trout Creek are typical of the remaining streams in the WSA. There are four water right holders with a total right of 18 cfs in the valley. Consequently, the existing water rights allow for use of about three times the average flow of the stream. Some isolated springs in the WSA on either side of the mountain range may still be available for appropriation (UDNRE, DWR, 1987).

Two private, small hydroelectric generating projects have been proposed, involving the lower parts of Birch, Trout, and Granite Creeks (USDI, BLM, 1982c). Most features of these projects would be adjacent to and outside of the WSA; however, water diversion pipelines could extend a short distance (0.2 mile) into the WSA. Rights-of-way for these water resource developments have been issued; however, as of March 1985, nothing has been constructed. Approximately 3,827 acres of the WSA are in BLM public water reserves (PWRs) (see Table 4).

Table 4
Public Water Reserve Withdrawals
Deep Creek Mountains WSA

Location	Acres
Township 11 South, Range 17 West, Section 18	487
Township 11 South, Range 17 West, Section 19	121
Township 9 South, Range 18 West, Section 27	40
Township 10 South, Range 18 West, Section 3	40
Township 10 South, Range 18 West, Section 7	34
Township 10 South, Range 18 West, Section 11	40
Township 10 South, Range 18 West, Section 12	40
Township 10 South, Range 18 West, Section 24	9
Township 10 South, Range 18 West, Section 35	34
Township 12 South, Range 18 West, Section 5	288
Township 12 South, Range 18 West, Section 6	280
Township 12 South, Range 18 West, Section 8	48
Township 12 South, Range 18 West, Section 9	335
Township 12 South, Range 18 West, Section 10	40
Township 12 South, Range 18 West, Section 15	90
Township 12 South, Range 18 West, Section 19	240
Township 10 South, Range 18 West, Section 20	240
Township 10 South, Range 18 West, Section 29	171
Township 13 South, Range 18 West, Section 5	120
Township 13 South, Range 18 West, Section 6	632
Township 13 South, Range 18 West, Section 8	320
Township 13 South, Range 18 West, Section 9	160
Township 13 South, Range 18 West, Section 18	38
Total	3,827

Source: USDI, BLM, 1986.

The PWRs are segregated from the public land laws and nonmetalliferous mining. In addition, the BLM House Range RMP closes the PWRs in Juab County (3,590 acres) to the location of mining claims.

Mineral and Energy Resources

The mineral and energy resource rating summary is given in Table 5. Refer to Appendix 5 in Volume I for a detailed description of the SAI rating system.

Table 5
Mineral and Energy Resource Rating Summary

Resource	Rating: Favorability[a]	Rating: Certainty[b]	Estimated Resource
Oil and Gas	f2	c1	Less than 10 million barrels of oil; less than 60 billion cubic feet of gas
Uranium	f2	c2	Less than 500 metric tons of uranium oxide
Coal	f1	c4	None
Geothermal	f2	c2	Low temperature resource
Gold	f2	c3	Up to 25 metric tons.
Silver	f2	c3	Up to 500 metric tons.
Lead/Zinc	f2	c3	Up to 50,000 metric tons
Copper	f2	c3	Up to 50,000 metric tons
Tungsten	f2	c3	Up to 500 metric tons
Beryllium	f2	c3	Small deposits

Source: SAI, 1982; USDI, BLM, 1987d

[a]Favorability of the WSA's geologic environment for a resource (f1 = lowest favorability or smallest size deposit; f4 = highest favorability or largest size deposit).

[b]The degree of certainty that the resource does or does not exist within the WSA (c1 = lowest and c4 = highest).

The WSA contains deposits of copper, beryllium, silver, mercury, zinc, lead, tungsten, and molybdenum, that are currently listed as strategic and critical materials (USDoD, 1988). Although listed as strategic and critical, copper is relatively common. Supplies currently exceed domestic demand.

- Leasable Minerals

  - Oil and Gas

    There are no known deposits of oil and gas in the WSA. The major reason for this is that a large granitic intrusive body of rock in the WSA has altered the surrounding sedimentary rock by heat and pressure. Any pre-existing reservoirs of oil and gas were likely destroyed. There are no known source or reservoir rocks exposed in the WSA.

    There are no oil and gas leases in the WSA. There are currently no active exploration or drilling activities taking place in the WSA or the immediate vicinity, and there are no producing wells in the area. The favorability for the occurrence of oil and gas is f2 with a low degree of certainty in

the Deep Creek Mountains WSA. If oil or gas do exist in the WSA, quantities are expected to be less than 10 million barrels of recoverable oil or less than 60 billion cubic feet of recoverable natural gas.

Currently the WSA is managed under oil and gas Category 4 (closed to leasing) on about 14,997 acres, Category 3 (no surface occupancy) on 37,741 acres, and Category 1 (standard stipulations) on 16,172 acres. The Category 1 lands are in the Tooele County portion of the WSA.

- Geothermal

Because of the younger volcanic rocks in the area, and the potential for faults to intersect a deep thermal reservoir, the WSA has a geologic favorability for small (f2) low temperature resources. The certainty level is assigned a (c2) low degree due to the widespread occurrence of thermal springs in this region.

- Locatable Minerals

Four main types of ore bodies have been encountered in the area. They include pegmatite dikes, hydrothermal veins, hydrothermal replacements, and contact replacements. The entire WSA lies within the Deep Creek-Tintic mineral belt; 95 percent of all of Utah's gold, silver, copper, lead, and zinc production has come from three such mineral belts (SAI, 1982).

Locatable minerals known to occur within the WSA include gold, silver, lead, zinc, tungsten, copper, mercury, beryllium, and molybdenum. There is also a potential for uranium and barite.

The geologic favorability for the occurrence of the various locatable minerals is shown in Table 5. This favorability is based on the geologic environment of the WSA, industry experiences, published literature, and actual production from mines near the WSA.

In the WSA there are 295 mining claims covering approximately 5,900 acres. Most claims are in the Tooele County portion of the WSA. Two of the private in-holdings in the WSA are patented claims for the Roy and Dewey Mines.

There are four mining districts in the Deep Creek Mountains: Willow Springs, Clifton (or Gold Hill), Spring Creek, and Trout Creek. Claims associated with past mining operations in these districts overlap the WSA boundary and would be subject to exercise of valid existing rights. From 1934 to 1954, the Willow Springs District produced minerals as follows: gold (greater than 11,000 oz), silver (greater than 45,000 oz), lead (2,767,000 lb), copper (20,000 lb), zinc (30,000 lb), and mercury (greater than 15,000 lb) (Doelling and Perry, 1979).

The Clifton (Gold Hill) Mining District produced minerals in the following amounts between 1901 and 1964: gold (25,000 oz), silver (32,000 oz), and copper (1,700 tons) (El-Shatourg and Whelan, 1970).

It has been estimated that between $750,000 to $1 million worth of mineral commodities have been produced from the area. In recent years, locatable mineral activity in the Deep Creek Mountains has been sporadic. Exploration and core drilling are seasonally ongoing in the north end, outside of the WSA boundary. Mining, production, and milling have occurred in Goshute Canyon, and mining activities have occurred in Queen of Sheba and Arts Canyons. Prospecting and claiming occur on occasion. The value of recent minerals extracted from the Deep Creek Mountain vicinity is not known. Considering the estimated mineral reserves, plus past and present production from existing mining operations, it is likely that exploration and mining activity will continue in the vicinity of the WSA. This activity likely will be centered around existing claim groups; mining activity will expand along known deposits at a logical pace and progression and may ultimately increase. Within the 68,910 acres of the WSA, the most likely areas to be involved in additional mining are on the north and east sides in Tooele County, although parts of several claim groups exist elsewhere within the WSA.

- Beryllium

This mineral occurs in the vicinity of the Trout Creek mining properties (Thomson, 1973). Although there is no production within the WSA, the favorability (f2) exists for small deposits based on the geologic characteristics of the Deep Creek Mountains and known beryllium deposits in other locations within Utah's West Desert. A moderate degree of certainty (c3) has been assigned.

- Copper

Scattered occurrences of copper exist within and near the WSA (SAI, 1982; Thomson, 1973). Consequently, the favorability for copper is rated f2, favorable for small deposits (less than 50,000

metric tons), with a moderate degree of certainty (c3).

• Gold and Silver

Most prospecting and mining in the Deep Creek Mountains have involved gold and silver. These metals are known to occur adjacent to and outside of the WSA boundary in the southwest, south, northeast, and north portions of the Deep Creek Mountains. The geology is considered very favorable for both small vein type deposits and sediment hosted, disseminated type deposits for several reasons. First, the Deep Creek Mountains lie within two mineral belts; the Deep Creek-Tintic east/west trend (Hilpert, 1967) and a copper porphyry province (Tooker, 1980, 1986). Second, the geology (especially in the northern sections) and associated known pathfinder minerals such as barite, molybdenum, limonite, antimony, lead, zinc, mercury, and fluorite indicate a favorable geologic model for a sediment-hosted deposit (USDI, USGS, 1985 and 1986). Small deposits of gold and silver could also be recovered as secondary minerals to copper or lead and zinc deposits. Evidence indicates that the geology of the WSA is generally favorable for gold and silver (SAI, 1982) and, therefore, a favorability of f2 (small deposits) has been assigned. Because of the proximity of known mines and deposits and the historic production from the area, the certainty is rated moderate (c3).

• Lead and Zinc

There are no known occurrences of lead and zinc in the WSA; however, these minerals have been recovered in adjacent areas. The favorability of the geologic environment is rated f2, favorable for small deposits, with a moderate (c3) degree of certainty. Similar geologic characteristics as described under Gold and Silver also apply here.

• Tungsten

This mineral is known to occur at the boundary of the WSA in the vicinity of Trout Creek. There are numerous mine workings and past production has occurred near the WSA. On this basis, the favorability of occurrence is rated f2, favorable for small deposits, with a moderate (c3) degree of certainty.

• Uranium

A study of the Deep Creeks for uranium occurrences in 1979 (Cadigan, et al.) found only slightly anomalous readings of the Ibapah stock for uranium. Most of the uranium potential lies outside the WSA below the 5,200-foot terrace level. Therefore, a geologic favorability of f2, for small occurrences was assigned, with a low (c2) degree of certainty.

• Other Minerals

Other minerals known to occur within the WSA include barite, molybdenum, arsenic, quartz, beryl, antimony, mercury, fluorite, manganese, and cerussite (Bullock, 1981). These minerals are often used as indicators of further mineralization, as discussed under Gold and Silver above.

• Salable Minerals

Salable minerals within the WSA are mostly limestone, riprap material, sand, and gravel. There are no established material sale sites within the WSA and, due to material quality, distance to markets, and the large Statewide reserves, no demand for such sites is foreseen.

Wildlife Including Special Status Species

The Deep Creek Mountains WSA provides habitat for a variety of animal species. There are 83 species of mammals, 185 species of birds, 18 species of reptiles, 6 species of amphibians, and 2 species of fish that inhabit the area at different times of the year. Although a great diversity exists, no one species could be described as abundant. An estimated 900 to 1,000 mule deer inhabit the Deep Creek Mountains. Cougar are also found in the WSA.

There are two endangered species (bald eagle and peregrine falcon) and one BLM sensitive species (golden eagle) found in the WSA. Although there are no Federally designated critical habitats in the WSA, the area is considered crucial, yearlong golden eagle habitat. The term "crucial" indicates that the eagles may nest somewhere in the area. The upper reaches of two streams, Birch and Trout Creeks, support the Bonneville cutthroat trout, a Category 2 candidate species, and are considered crucial habitat.

Five Category 2 candidate bird species could occur in the WSA. These are the ferruginous hawk, long-billed

curlew, Swainson's hawk, western snowy plover, and white-faced ibis. These birds frequent areas throughout the Great Basin and other parts of the Western United States. Refer to Appendix 4 in Volume I for details.

There are about 8,000 acres of crucial deer winter range and 3,000 acres of crucial deer summer range within the WSA boundary. Much of the crucial winter range is on the northern end of the WSA.

Approximately 68,000 acres in the WSA are managed under the Deep Creek Mountain and Trout Creek Habitat Management Plans. Planned habitat improvement projects include: (1) development of five springs and one reservoir; (2) installation of 160 stream improvements and 80 bank stabilization structures; and (3) hand-thinning of 200 acres of aspen in two locations. There are approximately 11.5 miles of fisheries in the WSA.

The UDWR reintroduced Rocky Mountain bighorn sheep into its historical range within the WSA in January 1984. The herd consists of 22 sheep. No crucial or critical habitat acreage has been established for this species to date.

Forest Resources

Within the Tooele County portion of the Deep Creek range, there are approximately 3,000 acres of non-commercial coniferous forest. An additional 7,000 acres contain scattered conifers mixed with riparian species, aspen, and mountain mahogany. None of the forest species identified in the north part of the WSA are suitably located or stocked with a board foot volume to provide a commercial marketable product. In the southern part of the WSA, about 4,900 acres of commercial quality woodland would produce about 500,000 board feet of lumber; however, only about 25,000 board feet are presently accessible. The House Range RMP closes the area to commercial timber harvest. It is unlikely that any new roads would be constructed in the Deep Creek Mountains for forest product harvest.

Approximately 37,212 acres of pinyon-juniper woodland cover 54 percent of the WSA and are found in the lower slopes. Access is steep and often inaccessible. Presently, all use of woodland products on the north Deep Creek Mountains is confined to pinyon-juniper woodland harvest outside the WSA. Within the Juab County portion of the WSA, there are about 6,000 acres of woodland, with a potential production of about 52,980 cords of fuelwood, 11,101 cords of juniper, and about 47,000 lb of pine nuts in high production years (1 in every 7 to 10 years). Existing use includes about 20 cords of firewood and a few fenceposts harvested annually by local families. There have not been any commercial permits issued for either firewood or posts. About 500 lb of pine nuts are harvested annually. In high production years, about 7,000 lb of pine nuts are harvested.

Livestock and Wild Horses/Burros

The existing livestock use inside the WSA consists of grazing on a total of eight allotments. Cattle graze in portions of six allotments and sheep and cattle graze in two of the eight allotments. There are 20 operators who run livestock in these eight allotments; however, only 17 operators run livestock inside the WSA. Table 6 gives livestock grazing use data for the WSA.

Most of the available forage for livestock inside the WSA is in the canyon bottoms and on adjoining side hills. The terrain is so rugged that cattle are limited to canyons where water is available.

Permittees often use roads and trails to distribute salt from vehicles. Horses are used to manage and herd livestock on and off the allotments. No water is hauled and no camps are established in the WSA.

There is a single existing range improvement within the WSA; the partially developed Trough Spring. A range project is proposed to redevelop this spring with 1 mile of pipeline added on the east. This project is proposed to improve livestock distribution. In addition, development of Birch Springs to augment the flow of an existing development adjacent to the WSA is proposed.

APHIS conducts predator control in the BLM grazing allotments that comprise the WSA. A total of 87 coyotes were taken in the allotments in and surrounding the WSA during 1986 and 1987 (USDA, APHIS, 1988). Sixty-eight were taken from aircraft, ten were taken by cyanide guns (M-44s), six by calling, and three by trap or snare. The WSA comprises between 1 and 20 percent of any one allotment. It is not known what proportion of the coyotes were actually taken within the WSA. The combined confirmed livestock losses for 1986 and 1987 in these allotments were six sheep and four lambs. An unrecorded number of additional losses were reported by livestock operators.

Table 6
Livestock Grazing Use Data

Allotments	Total Acres	Acres in WSA	Total AUMs	Number of AUMs in WSA	Number and Kind of Livestock	Season of Use	Number of Operators
Callao	18,603	2,260	706	70	144 Cattle	11/01-05/31	2
Thousand Peaks	332,022	19,148	20,205	64	1,182 Cattle 9,775 Sheep	11/02-05/08	1
Partoun	91,983	1,948	4,260	93	602 Cattle 2,350 Sheep	11/01-05/31 11/02-04/20	4
Mountain	13,750	5,290	377	131	266 Cattle	07/16-10/01	3
Ochre	26,143	3,430	1,442	119	240 Cattle	11/01-04/30	1
Ibapah	41,958	12,150	2,739	377	821 Cattle	04/01-08/31	7
Overland Canyon	52,369	18,804	2,322	245	399 Cattle	11/01-04/30	1
Six Mile	7,780	5,880	286	110	66 Cattle	10/01-01/10	1
Total	576,828	68,910	32,337	1,209			20

Sources: BLM File Data.

There are no wild horses or burros in this WSA.

Visual Resources

The Deep Creek Mountains rise with outstanding visual prominence from the adjacent Great Salt Lake Desert. Mountain peaks extend up to 8,000 feet above the surrounding desert valleys.

Landforms at upper elevations (from 8,000 to over 12,000 feet) are characterized by steep canyons, sheer cliffs, high mountain meadows, and barren peaks. Vegetation dominates color contrasts with evergreens, desert shrubs, and high mountain grasses. Outcroppings of rock offer many forms and varieties of shape and color to the area. Numerous wildflowers offer color contrasts and variety to the landscape. Man's influences are noted in such ways as abandoned mining cabins and mines. These characteristics combine to provide outstanding scenic quality. Scenic quality classes are rated as A (high quality) and high B (moderate).

Landforms at mid-elevations (7,000 to 8,000 feet) are characterized by smoother slopes and lower canyons, but still have dominant rock outcroppings with some cliffs. Vegetation cover is quite thick and creates contrasts of rugged character. The pinyon-juniper stands located among other desert shrubs and grasses offer a variety of vegetative contrast to the WSA. Scenic classes range from B (moderate) to C (average).

Landforms at lower elevations (5,700 to 7,000 feet) are characterized by rolling hills, shallow canyons, or winding washes. Hills are covered by sparse vegetation or are barren. Light soils affect the visual coloring of the areas, but still are heavily dominated by vegetation cover and occasional rock outcroppings. Mining scars are more visible because of the lack of visual screening. Roads are primitive and rugged. Scenery in the foothills is typically rated as common, Class C.

A summary of the visual resource characteristics is found in Table 7. (Refer to Appendix 7 in Volume I for a description of the BLM VRM rating system.)

Cultural Resources

As of 1988, a sample survey of the southeastern quadrant of the Deep Creek Mountains WSA has identified 28 sites, of which 12 are inside the WSA (USDI, BLM, 1988). None of these sites are included or nominated for inclusion in the National Register of Historic Places. These sites covered a range of 8,500 years from the Paleo-Indian to the prehistoric Shoshoni. Based on this sample, site density was predicted to

be fairly high. All prehistoric stages are expected to be represented. The amount of historic activity, including major trails, mining, and ranching, would indicate that there are also historic sites such as old corrals, mines, and cabins present in the area.

Table 7
Visual Resource Quality and Management Class

Element	Juab County	Tooele County	Total	Percent of WSA
Scenic Quality				
Class A	18,751	6,200	24,951	36
Class B	8,300	12,230	20,530	30
Class C	3,689	19,740	23,429	34
Totals	30,740		38,170	68,91000
Management Classes				
Class I	0	0	0	0
Class II	28,440	13,740	42,180	61
Class III	700	16,030	16,730	24
Class IV	1,600	8,400	10,000	15
Totals	30,740		38,170	68,91000

Source: USDI, BLM, 1973 and 1986d.

Recreation

The quality of 15 recreational opportunities was evaluated for this WSA. All 15 activities are available in varying degrees. Seven opportunities were found to be above average to excellent in quality. These include backpacking, dayhiking, camping, nature study, photography, geologic sightseeing, and scenic vistas. The remaining eight opportunities are average or below average in quality.

The Deep Creek Mountain Range is the only mountain range in the interior of the Great Basin in Utah with an abundance of water. Six perennial streams on the eastern slopes of the range support fish populations of rainbow and Bonneville cutthroat Trout. Mule deer, bighorn sheep, mountain lion, antelope, grouse, chukar, and several other wildlife species are found on the mountain range and/or adjoining benchlands. The majority of the Deep Creek Mountains offers outstanding opportunities for nature-oriented types of recreation.

The Deep Creek Mountains' 12,000-foot peaks and perennial streams, in combination with 600 plant species and over 185 bird species, provide opportunities for wildlife observation and nature study. Big game hunting (antelope and deer), upland game hunting (grouse and chukar), fishing, backpacking, hiking, mountaineering, and camping are the most popular recreation activities in this area. BLM recreation specialists estimate that there are approximately 3,500 hunter days, 1,500 fisherman days, and 3,000 backcountry (i.e., hiking and backpacking) visitor days annually in the Deep Creek Range. An estimated 70 percent of this use (5,600 visitor days) is within the WSA. Hunting and fishing in the Deep Creek Mountains (5,000 visitor days) is associated with ORV access.

ORV use occurs along the foothills of the Deep Creek Mountains and in the canyons with existing access. Mining, range work, wildlife and recreation management, and various recreation pursuits utilize access by ORVs. Access to higher elevations is limited to a total of about 15 miles of short ways or jeep trails in several canyons. Here, the steep slopes and rugged terrain preclude extensive ORV use.

Approximately 52,600 acres are currently closed to ORV use except for about 10 miles of existing ways and jeep trails that are open for use. Approximately 16,310 acres are open to ORV use in the northern end of the WSA. In Granite and Trout Creek Canyons, ORV use is limited to existing ways and jeep trails from June to November, depending on soil conditions. ORV use is related to providing access in connection with the visitor days of recreation use noted above.

Land Use Plans

The WSA is BLM-administered public land except for five State sections (3,207.8 acres) and 256 acres of private land in-holdings. The current policy of the State of Utah is to maximize economic returns and to reserve its position regarding exchange of in-held lands. The Utah State Legislature passed S.C.R. No. 1 in 1986, opposing any additional wilderness designation in Utah and urging that State lands not be exchanged out of wilderness areas. Of the 3207.8 acres of State land, 647.8 acres (T. 10 S., R. 13 W., sec. 2) are under lease for metals and livestock grazing.

Current BLM planning documents for the Deep Creek Mountains area include the Tooele Planning Area MFP (USDI, BLM, 1984c) and the House Range RMP. Wilderness is not addressed in the House Range RMP (USDI, BLM, 1984 and 1986) but is addressed in the Tooele MFP, wherein approximately 21,860 acres in the Tooele County portion of the WSA are recommended as suitable for wilderness designation. Wilderness designation is part of the BLM multiple-use concept. The BLM land use plans are linked to the Statewide

Wilderness EIS through inclusion of the present plan as the No Action/No Wilderness Alternative.

The Tooele County Master Plan (Mountain Area Planners, 1972) does not specifically address wilderness. Land use in Tooele County is generally discussed throughout the Master Plan as wise multiple and cooperative uses. The Master Plan states:

> "The major part of unincorporated land in Tooele County is shown on the Master Plan Maps as multiple-use areas. It is proposed that these lands be subject to conditional use permits for all uses; that primary uses allowed be forestry, stock grazing, mining, and recreational activities in appropriate areas; that emphasis of management practices be placed on conservation and wise use of natural resources, to permit and encourage improvements in soils stability, plant cover, water quantity and quality, and scenic beauty."

Juab County does not have a current master plan but has nearly completed a plan that does not specifically address wilderness. The county generally prefers multiple use, the concept being that open spaces be used for many purposes on public lands (Fawcett, 1985).

Nevertheless, the Tooele and Juab County Commissioners have endorsed the Consolidated Local Government Response to Wilderness, which opposes wilderness designation of BLM lands in Utah. According to the Tooele County Commission, wilderness designation would be in direct conflict with the Tooele County Master Plan and current zoning designation, which was developed and adopted many years before any wilderness proposals were considered. BLM's present land use plans are consistent with State and local government plans. As part of BLM's planning efforts for the Tooele MFP and House Range RMP, Tooele and Juab Counties and the State of Utah were given opportunity to review and comment on the draft and final plans. Letters received by BLM did not specifically indicate that the plans were inconsistent with State and local planning (Bangerter, 1986b).

The Deep Creek Mountains WSA is in the South Range of the USAF's Utah Test and Training Range. The USAF's position is that low level military overflights of the Utah Test and Training Range, including the Deep Creek Mountains WSA, would continue with or without wilderness designation.

Birch and Trout Creeks from their source to their junction are listed as Nationwide Rivers Inventory segments (USDI, NPS, 1982). Thus, they are eligible for study for addition to the Nationwide Wild and Scenic Rivers System. The inventory found that these segments possess excellent primitive recreation opportunities, unique geological features relating to ancient Lake Bonneville, a vertical granite canyon, Bonneville cutthroat trout, and bristlecone pine. About 1.5 miles of Birch Creek and 5 miles of Trout Creek are within the WSA. Since they are inventory-listed segments, the BLM must, as part of its environmental review process, avoid or mitigate adverse impacts to these creeks and consult with the NPS before taking any action that could foreclose wild, scenic, or recreational river status (CEQ, 1980).

Socioeconomics

- Demographics

The Deep Creek Mountains WSA is located in Juab and Tooele Counties, Utah. Social and economic conditions relative to the WSA are shared by both counties, although most mineral activity is within Tooele County.

Census figures for 1980 (USDC, Bureau of the Census, 1981) show a Tooele County population of 26,033 and a Juab County population of 5,550 (increases of 45.7 and 20.9 percent, respectively, since 1970). The 1987 populations are approximately 28,600 for Tooele County and 5,890 for Juab County. Table 8 shows the 1980 census figures and projects populations to the year 2010.

Table 8
Baseline and Projected Population and Employment Growth
Tooele and Juab Counties

	1980	1990	2000	2010
Tooele County				
Population	26,200	30,000	35,000	42,700
Employment	10,649	12,200	14,300	16,600
Juab County				
Population	5,550	5,900	6,200	7,250
Employment	2,265	2,300	2,600	3,100
Totals				
Population	31,750	35,900	41,200	49,950
Employment	12,914	14,500	16,900	19,700

Source: Utah Office of Planning and Budget, 1987.

The population of Tooele County is heavily concentrated (about 85 percent) in Tooele Valley, or that northeastern corner of the county referred to as the Tooele-Grantsville Division. The remaining 15 percent of Tooele County's population is scattered throughout the county. Tooele (population 14,335) is the largest city in Tooele County. The community of Ibapah, in Tooele County, is 3 miles west of the WSA and has a population of about 75 people. Nephi (population 3,285) is the largest community in Juab County. The western half of Juab County is very sparsely settled. The community of Callao, in Juab County, is 4 to 6 miles east of the WSA and has a population of about 35 people. The Goshute Indian Reservation is located to the west of the WSA, with about 105 people in Utah and Nevada.

- Employment

Table 8 provides baseline (1980) and projected employment for Tooele and Juab Counties to the year 2010. The largest employment sector in these counties is government. For example, the Tooele Army Depot accounts for more than 50 percent of the employment in the county. Mining has been declining and provides less than 10 percent of the employment in either county.

Tooele County is part of the Wasatch Front MCD while Juab County is in the Central MCD. Tables 9 and 10 show the baseline (1980) and projected employment by source for these MCDs to the year 2010.

Table 9
Wasatch Front Multi-County District Employment[a]

	1980	1990	2000	2010
Agriculture	5,315	5,600	5,700	5,900
Mining	7,122	3,000	3,400	3,900
Construction	21,608	26,500	35,600	45,600
Manufacturing	60,121	70,600	91,900	115,300
Transportation, Utilities	26,989	33,100	42,000	51,600
Trade	95,989	126,400	161,200	200,300
Finance, Insurance, Real Estate	20,770	30,800	39,000	48,900
Services	71,019	116,500	155,300	189,400
Government	86,017	103,800	111,800	127,600
Nonfarm Proprietors	26,016	35,100	42,600	55,200
Totals	420,966	551,400	688,500	843,700

Source: Utah Office of Planning and Budget, 1987.

[a]Includes Davis, Morgan, Salt Lake, Tooele, and Weber Counties.

In 1980 the leading employment sectors for the Wasatch Front MCD were trade (23 percent), government (20 percent), and services (17 percent). Mining provided approximately 2 percent of the direct employment in the Wasatch Front MCD which includes large operations such as the Kennecott Copper Mine.

Table 10
Central Multi-County District Employment[a]

	1980	1990	2000	2010
Agriculture	3,649	3,500	3,600	3,800
Mining	706	700	800	900
Construction	822	1,400	2,200	2,200
Manufacturing	2,047	1,900	2,200	2,600
Transportation, Utilities	589	1,300	1,400	1,500
Trade	2,604	3,400	4,000	4,900
Finance, Insurance, Real Estate	347	400	500	600
Services	1,439	2,300	2,900	3,500
Government	3,919	4,100	4,100	4,900
Nonfarm Proprietors	2,278	2,800	3,300	4,100
Totals	18,400	21,800	25,000	29,000

Source: Utah Office of Planning and Budget, 1987

[a]Includes Juab, Millard, Piute, Sanpete, Sevier, and Wayne Counties.

It is projected that by the year 2010 employment in the Wasatch Front MCD will double. Trade will increase to 24 percent and services to 22 percent of the total, while government will decline to 15 percent and mining to 1 percent of the total.

In 1980 the leading employment sectors for the Central MCD were government (21 percent), trade (14 percent), and proprietorships (12 percent). Mining provided approximately 4 percent of the direct employment in the Central MCD.

It is projected that by the year 2010 employment in the Central MCD will increase by about 58 percent and that trade will increase to 17 percent and proprietorships to 14 percent of the total, while government will decline to 17 percent and mining to 3 percent of the total.

- Sales and Revenues

Economic-related activities in the WSA include mineral exploration; mineral, livestock, and woodland production; and recreation. Table 11 summarizes local sales and Federal revenues from the WSA. Appendix 9 in Volume I identifies the multipliers used to estimate income and revenues.

The WSA has 295 mining claims. Regulations require a $100 annual expenditure per claim for labor and improvements, an undetermined part of which is spent in the local economy.

As much as $1 million worth of mineral commodities have been produced previously from the WSA (not at current rates). This production has generated an unknown number of work years of employment, which includes local employment. Recent mineral production in and around the WSA has been sporadic and current economic values are unknown.

Table 11
Local Sales and Federal Revenues

Source	Annual Local Sales[a]	Annual Federal Revenues
Oil and Gas Leases	0	0
Mining Claim Assessment	$29,500	0
Livestock Grazing	24,180	$1,862
Woodland Products	3,500[b]	140
Recreational Use	32,800	0
Total	$89,980	$2,002

Sources: BLM File Data; Appendix 9 in Volume I.

[a]Local sales represent money potentially spent. They do not account for the total local income that would be generated by these expenditures.

[b]This figure represents the value of the products to those who harvest them and may not be directly related to sales.

Seventeen livestock operators have a total grazing privilege of 1,209 AUMs within the WSA. If all this forage were utilized, it would account for an estimated $24,180 of livestock sales, including $6,045 of ranchers' returns to labor and investment.

The actual amount of income generated locally from recreational use in the WSA is unknown. However, an approximate range of expenditures can be deduced (Dalton, 1982). This study indicates that the Statewide average local expenditures per recreational visitor day for all types of recreation in Utah are approximately $4.10. The recreational use for the Deep Creek Mountains WSA is estimated as about 8,000 visitor days per year. Only a small portion of the expenditures for recreational use of the WSA contributes to the local economy of Tooele and Juab Counties because tourist services in the vicinity of the Deep Creek Mountains are limited to gasoline and food supplies at Trout Creek and Ibapah. The nearest lodging is in Wendover and Delta, Utah; and Baker, Nevada; all over a 1-hour drive from the WSA.

Average actual livestock use and, therefore, revenues generated from grazing in the WSA, are unknown; however, the permittees in the WSA can use up to 1,209 AUMs per year. Based on a $1.54 per AUM grazing fee, the WSA can potentially generate $1,862 of grazing fee revenues annually, 50 percent of which would be allocated back to the local BLM District for the construction of rangeland improvements.

Present forest product harvesting has only a small effect on the local economy. Future demands for firewood caused by increasing costs of other fuels may increase interest in harvesting the products. Lack of access will continue to be a limiting factor. Annual woodland product harvest includes about 20 cords of fuelwood (with a total value of $1,500), a few fence posts, and about 500 lb of pine nuts (with a total value of $1,250). High production of pine nuts occurs about every 7 to 10 years, resulting in an occasional harvest of up to 7,000 lb. At $2.50 per lb, this occasional harvest generates sales of $17,500 which, if averaged over a 10-year period, would equal about $1,750 annually. These harvests from the WSA generate an estimated $140 of Federal revenues annually.

ENVIRONMENTAL CONSEQUENCES OF ALTERNATIVES

This section describes the environmental consequences of implementing the alternatives. The analysis is based on the BLM management actions and anticipated activities presented in the Introduction to Volume II and the Description of the Alternatives for the Deep Creek Mountains WSA.

No Action/No Wilderness Alternative

The major changes that could occur in the area would be related to locatable mineral exploration and production in the northern end of the WSA. Note that the WSA is thought to have low potential for oil, gas, and geothermal resources, and production of these resources is unlikely.

- Impacts on Wilderness Values

With this alternative, wilderness characteristics in the WSA would be somewhat protected by limitations placed on resource uses and potential surface-disturbing activities, as described in the Description of the Alternatives. However, the wilderness values in the future would not receive the degree of protection afforded by application of the Wilderness Management Policy (BLM Manual 8560).

Projected mineral exploration and development expected to be concentrated in the foreseeable future on 74 acres in the northern and northeastern portions of the WSA and on 4 acres for access purposes to T. 9

S., R. 18 W., sec. 32; would result in direct loss of naturalness and opportunities for primitive recreation and solitude in the disturbed areas. The additional 8 acres of disturbance for rangeland and wildlife habitat improvements would result in direct loss of naturalness and opportunities for primitive recreation and solitude in the disturbed areas in most cases until reclamation is complete. The exception is the proposed reservoir where the loss of wilderness values would continue. In addition, the visual and audible disturbance from mineral development and use of roads would indirectly reduce opportunities for solitude and primitive recreation during the period of activity on adjacent areas involving up to 20 percent (13,782 acres) of the WSA.

Special features would not be significantly affected because the direct disturbance would involve only 0.12 percent of the WSA and is not anticipated in areas where the Bonneville cutthroat trout, the giant stonefly, grapefern, archaeological sites, bristlecone pine, bighorn sheep, cougar, endangered or sensitive species, Class A scenery, or water features are found. In addition, appropriate measures would be taken to protect special status species prior to any surface-disturbing activity, and no negative impact would occur to these species. The spring developments would benefit wildlife special features.

Motor vehicle use would continue to occur on 10 of 15 miles of vehicular ways and on the 4 miles of new roads which during the period of use, would detract from opportunities for solitude and primitive recreation. Vehicle use would be limited by terrain and management to areas where it is now occurring or to new roads so no future loss of naturalness due to ORV disturbance is anticipated. Except for motorized use of existing ways and new mining roads, recreational use would be primitive in nature and probably not significantly impact other wilderness values due to the large size of the area.

Overflights by military aircraft would continue to be an occasional annoyance that would detract from the opportunity for solitude and primitive recreation in the WSA.

The degree of loss of wilderness values from long-term development is not accurately known. Loss would occur as intrusions increase.

Conclusion: Wilderness values would not be protected by wilderness designation and loss would occur as intrusions increase. In the foreseeable future, naturalness and outstanding opportunities for solitude and primitive recreation would be directly lost on 86 acres and opportunities for solitude and primitive recreation would be indirectly reduced in quality on up to 13,782 acres. Special features would not be significantly affected.

- Impacts on Water Resources

Mineral exploration and development in the northern portion of the WSA would generally be shallow and would not significantly change groundwater quantity or quality.

Due to restrictions on development imposed by public water reserves and guidelines for protection of riparian habit, potential surface disturbance of 86 acres would not decrease water quality in the streams of the WSA. Existing and future water uses would not be affected.

Conclusion: The No Action/No Wilderness Alternative would not alter present or future water quality or uses that would normally take place.

- Impacts on Mineral and Energy Exploration and Production

The WSA would remain open to exploration and development of mineral and energy resources without consideration of wilderness values. Therefore, mineral and energy resources would not be affected by the No Action/No Wilderness Alternative. Under the current land use plan 77 percent of the area would be closed to leasing or surface occupancy and 5 percent would remain withdrawn from mining claim location.

Conclusion: Implementation of the No Action/No Wilderness Alternative would not adversely affect or constrain mineral and energy exploration or production beyond the present situation.

- Impacts on Wildlife Habitat and Populations Including Special Status Species

With this alternative, all wildlife developments currently planned (including five springs, one reservoir, and 240 stream and bank improvements and stabilization structures) could be carried out without wilderness considerations. This would maintain or increase the availability of water and aquatic habitat in the area for wildlife use.

In the foreseeable future, the anticipated disturbance would mainly be in the north end of the WSA and would affect critical deer winter range. Only 1 percent of the critical deer winter range would be directly disturbed. Use of new roads would disturb deer during the winter season, mainly in corridors along the roads. Since only a small part of the winter range would be affected, there would not be a significant reduction in the deer population.

Projected surface disturbance activities would not occur in the Rocky Mountain bighorn sheep and golden eagle range.

There would be reductions in localized populations of small nongame wildlife species on the 86 acres directly disturbed with this alternative. Overall, less than one-tenth of 1 percent of the habitat in the WSA would be affected. The total population of any wildlife species in the WSA would not be significantly reduced.

Peregrine falcon and bald eagle (both endangered), golden eagle, and Bonneville cutthroat trout occur in the WSA. Five additional Category 2 candidate bird species could occur in the WSA. Prior to any surface-disturbing activity, consultation would be initiated with the FWS as required under the provisions of the Endangered Species Act. Appropriate measures to protect these birds and fish would be implemented. Because of these measures, and the anticipated location and limited extent of disturbance, no impact to these species is anticipated.

Conclusion: Less than 1 percent of the wildlife habitat in the WSA would be disturbed, and wildlife populations would not be significantly reduced. Major impacts on special status species would not occur.

- Impacts on Livestock Management

Domestic livestock grazing would continue as authorized in the Tooele MFP and House Range RMP. There would be no changes in or effect on the current livestock use and management, including predator control, with this alternative. Current proposals to redevelop Trough Spring and add 1 mile of pipeline and development of Birch Springs would be carried out. No substantial changes in livestock management techniques are expected.

Conclusion: Livestock management and grazing levels would not be affected.

- Impacts on Recreation

In the short term, the quality of a user's primitive recreational experience would be reduced by 86 acres of surface-disturbing activities in the northern portions of the WSA. Sights and sounds from this, plus development and use of 4 miles of road, would reduce or eliminate the quality of primitive recreation on about 20 percent (13,782 acres) of the WSA for the duration of the activities which are expected to continue over the long term.

The future increase in recreational use of the WSA in unknown. However, based on a review of several projections (UDNRE, ORA, 1980; UDNRE, DPR, 1985; Utah Office of Planning and Budget, 1984; Jungst, 1978; Hof and Kaiser, 1981; and Cordell and Hendee, 1982) it is estimated that outdoor recreation in Utah will increase between 2 and 7 percent per year over the foreseeable future. At this rate, overall recreational use in the Deep Creek Range is expected to increase from 8,000 current visitor days per year to between 15,000 and 69,700 by the year 2020. Assuming that the 2 to 7 percent increase would be uniform among all types of recreation, primitive recreational use would increase from the estimated current use of 3,000 visitor days per year to between 5,600 and 26,100 per year by the year 2020. Likewise, recreational activities utilizing vehicular access (hunting, fishing, etc.) would increase from 5,000 visitor days per year to between 9,400 and 43,600.

In the Deep Creek Mountains WSA, topography discourages or prevents vehicular use except on existing roads, trails, and the 10 miles of vehicular ways that would remain open to vehicular use. The anticipated 4 miles of new roads in the north end of the WSA would also be available for vehicle use and access.

Approximately 52,600 acres of the WSA would be closed to ORV use under BLM land use plans. Because of topographic and planning constraints, vehicular use would be concentrated on roads, ways and trails and would adversely affect primitive recreation only in the northern end of the WSA.

As primitive recreational use increases, commercial outfitters may start to utilize the WSA.

Conclusion: The quality of primitive recreation would be reduced on about 20 percent of the WSA. Both primitive and motorized recreational use would increase.

• Impacts on Economic Conditions

With this alternative, no substantial changes are expected in existing overall patterns and trends of population, employment, and local income distributions as a result of activities in the WSA. The government sectors of these counties would not expand greatly beyond their current size, while the retail trade, manufacturing, and services sectors would continue to grow at a stable rate through the year 2010 (Utah Office of Planning and Budget, 1987). Mineral activity associated with potential new and existing claims could have a small beneficial impact on the local economy as would future increases in recreational use.

Increases in mineral development in the Deep Creek Mountains would mainly affect the small communities of Ibapah and Callao near the WSA. Employment of 20 persons would increase total employment of either Tooele or Juab Counties by much less than 1 percent. The affect would even be less as population and employment increases in the future.

There would not be a loss of local employment or income opportunities as a result of this alternative. The existing ability to explore and develop mineral resources would remain as at present. A portion of the $100 per year assessment fee required for each mining claim would reach the local economy.

There would be no livestock-related economic losses because the existing grazing use (1,209 AUMs) and ability to maintain, replace, and build new range improvements would remain as at present. The forage use in the allotment would continue to produce $24,180 annually in livestock sales.

There are 53,913 acres in the WSA open to lease that are currently not leased. If leased they would bring up to $107,826 additional Federal lease fee revenues per year. Half of these monies would be allocated to the State, a portion of which could reach the local economy. However, it is unlikely that this acreage would be leased on a long-term basis because of the low probability of oil and gas production.

Collection of livestock grazing fees ($1.54 per AUM or $1,862 from the WSA per year) would continue. About 50 percent of the revenues would be returned to the local BLM office for use in range improvement projects.

Woodland product harvest would continue to generate approximately $3,500 in product values and $140 in Federal revenue annually. As discussed in the Recreation section, recreational use and, therefore, recreation-related local expenditures, could increase at a rate of 2 to 7 percent per year over the next 32 years (86 to 768 percent increase over 32 years). Because recreational use in the area is estimated to increase 7,000 to 61,700 days per year over the next 32 years, and recreation-related local expenditures average $4.10 per visitor day, future recreation-related expenditures of $28,700 to $252,870 (attributable to the WSA) would be significant to the local economy, to the extent that these monies are spent in the small communities near the WSA. The portion of recreation-related expenditures in large communities along the Wasatch Front by visitors prior to traveling to the WSA would not have a significant effect on the economy.

Conclusion: Present economic conditions would not be affected. Over the short term, mineral activity would increase local employment by less than I percent. Recreation-related expenditures could contribute up to $252,970 annually to the local economy.

All Wilderness Alternative (68,910 Acres)

• Impacts on Wilderness Values

Wilderness designation and subsequent application of the Wilderness Management Policy (BLM Manual 8560), including closure of the area to ORV activity and to mineral location and leasing, and management of the area as VRM Class I, would contribute to the preservation of the identified wilderness characteristics of naturalness, outstanding opportunities for solitude and primitive, and unconfined recreation. Special features would be preserved.

Potential surface disturbance that would result in loss of wilderness values would be reduced with this alternative. The direct surface disturbance anticipated in the foreseeable future would be reduced from 86 acres to 36 acres. The proposed reservoir which would result in a loss of naturalness would not be built. Other wildlife or rangeland developments would only reduce naturalness and opportunities for solitude and primitive recreation until reclamation is complete. Mitigation to protect wilderness values would be considered during mining claim development, but road construction would be allowed for exploration of valid mining claims if there were no reasonable alternatives. Not only would mineral-related disturbance eliminate naturalness, and the opportunities for solitude and primitive, unconfined recreation on the

directly affected areas, but additionally, sights and sounds from mineral development and from use of roads would indirectly reduce opportunities for solitude and primitive recreation on up to 10 percent (6,891 acres) of the WSA. Special features would be preserved because the direct disturbance would involve only 0.05 percent (36 acres) of the WSA and would not be anticipated in areas where the Bonneville cutthroat trout, the giant stonefly, grapefern, archaeological sites, bristlecone pine, bighorn sheep, cougar; endangered, threatened, or other special status species; Class A scenery; or water features are found. The spring developments would benefit wildlife special features. In addition, appropriate measures would be taken to protect threatened or endangered and sensitive species prior to any surface-disturbing activity, and it is projected that no negative impact would occur to these species (refer to the Wildlife Including Special Status Species section).

Mining claims could be considered valid existing rights depending on the result of a validity determination. The likelihood of their full development will depend on future economic conditions. However, the number of existing mining claims, the history of previous mineral production, and the high favorability of additional deposits all lead to the conclusion that BLM would have difficulty preserving the wilderness characteristics in the north and northeastern portions (Tooele County) of the Deep Creek Mountains. This potential for manageability problems is increased by the presence of an in-held State section in the zone of mineralization. Access provided for mineral exploration and development on the State lands would reduce wilderness values in the north end of the WSA. Because no activities are anticipated in the balance of the WSA over the foreseeable future, access would probably not be required for the remaining State lands in the WSA and wilderness values would not be affected.

Except for use of 4 miles of new roads for mining claim development, vehicular use of ways and roads would cease, improving opportunities for solitude and primitive recreation. Increased recreational use would be primitive in nature and would be managed to preserve wilderness values.

Military overflights would continue to detract from opportunities for solitude and primitive recreation.

Conclusion: Wilderness values would be preserved overall. In the foreseeable future, naturalness and opportunities for solitude and primitive recreation would be directly lost on 36 acres and opportunities for solitude and primitive recreation would be indirectly reduced in quality on up to 6,891 acres due to valid existing rights.

- Impacts on Water Resources

Mineral exploration and development in the northern portion of the WSA would generally be shallow and would not significantly change groundwater quantity or quality.

Due to restrictions imposed by public water reserves and guidelines for protection of riparian habitat, potential surface disturbance of 36 acres would be located and controlled to avoid affects on the quality of surface waters.

Indian Reservation Reserved Rights cover the headwaters of Trout and Birch Creeks. Most of the streams originate on or near the WSA and use of water upstream of the WSA is not likely. Major water use areas are outside and downstream of the WSA, and future use of water in these areas would not be affected with the possible exception of the Birch and Trout Creek drainages.

Future water development inside the WSA would be restricted to protect wilderness values. However, all proposed water facilities, with the exception of a small reservoir, would be designed and installed compatible with wilderness protection guidelines.

Conclusion: Wilderness designation would not significantly alter present or future water quality or uses.

- Impacts on Mineral and Energy Exploration and Production

  - Leasable Minerals

    No exploration or production of oil and gas is occurring at the present time and none is anticipated as there are no leases in the WSA. None would be issued prior to or following wilderness designation.

    Due to the probable small size of the potential deposits and the presence of more favorable deposits elsewhere (both in size and location), it is concluded that this alternative would not result in a significant loss of potential oil and gas recovery.

The low gradient geothermal resource could not be recovered under this alternative. However, there is no market for the resources in this vicinity, and it is unlikely that it would ever be produced regardless of wilderness designation.

- Locatable Minerals

Approximately 5,900 acres are covered by 295 mining claims within the WSA. Development work and extraction would only be allowed on valid claims after wilderness designation under unnecessary or undue degradation guidelines with consideration given to wilderness values. It is projected that existing mining claims would be developed in the northern and northeastern part of the WSA because the WSA has high potential for locatable minerals. For mining actions, a plan of operations would be required to include all access, functions, work, and facilities in connection with prospecting, development, extraction, and processing of mineral deposits whether these activities are on or off a mining claim. Stipulations issued by BLM to prevent unnecessary or undue degradation to wilderness character may be more stringent than would have been applied had the area not been designated wilderness. Although development of existing valid claims would be possible, the cost of development would be greater.

After wilderness designation, lands in the WSA that are not under valid claims would be closed to mineral location, prospecting, and production (USDI, BLM, 1981b).

- Salable Minerals

With this alternative, the opportunity to recover salable deposits within the WSA would be foregone. However, it is unlikely they would ever be produced commercially, even without wilderness designation, due to the remoteness of the area and the multitude of deposits outside the WSA.

Conclusion: Wilderness designation would limit potential exploration and development opportunities for locatable minerals known to occur in the WSA to those under valid mining claims at the time of designation. Opportunities for production of significant locatable minerals would be foregone. No significant leasable or salable minerals production would be foregone.

- Impacts on Wildlife Habitat and Populations Including Special Status Species

With this alternative, many of the wildlife developments currently planned (including five springs, maintenance of 160 stream improvements, and 80 bank stabilizing structures) could be designed and installed compatible with wilderness protection criteria (refer to Appendix 11 in Volume 1). The springs would increase the availability of water for wildlife use, and stream developments would improve the fisheries habitat. The proposed reservoir would be foregone with this alternative. No reduction in current mule deer use of the area is expected to result from preclusion of this proposed development.

This alternative would benefit wildlife, including special status species, through reduction of potential surface disturbance due to mineral development. Since disturbance would be localized in the north end of the WSA and would be approximately 50 acres less than with the No Action/No Wilderness Alternative, deer on the critical winter range would benefit. No loss of deer is anticipated as a result of disturbance of less than 1 percent of the critical winter range. Over the long term, additional protection would be provided to Rocky Mountain bighorn sheep, golden eagle, and other wildlife habitats. Over the foreseeable future, wildlife habitat would be lost on less than 1 percent (36 acres) of the WSA. Wildlife populations would not be adversely affected. Appropriate measures would be taken to protect the peregrine falcon and bald eagle (both endangered) and Bonneville cutthroat trout and golden eagle prior to any surface-disturbing activity. No impacts would occur to these species.

Conclusion: Wilderness designation would protect big game and other species. No impacts to special status species would occur.

- Impacts on Livestock Management

This alternative would not affect the level of livestock use (currently approximately 1,209 AUMs for cattle and sheep in this WSA). Trough Spring, partially developed, could be redeveloped and Birch Springs could be developed and maintained as planned. Vehicle access for livestock permittees would be regulated. This could necessitate changes in livestock management and supervision as they are currently practiced in this WSA. Restrictions on vehicle use would impact general access to and the hauling of salt in eight grazing allotments. The result would be an inconvenience to the affected permittees. Predator

control activities would be restricted to approved methods, and slight increases in predation on public, private, and State lands (within and adjacent to the WSA) would result. Predation on sheep in the Partoun and Thousand Peaks allotments is the most likely problem. Increased sheep losses would be slight because only 1 to 3 percent of either allotment is in the WSA, and several methods of predator control could still be utilized.

Conclusion: Wilderness designation would require changes in livestock management and supervision and cause inconvenience and increased management costs to 17 livestock permittees. Livestock losses to predators would increase slightly.

- Impacts on Recreation

In the foreseeable future, the quality of a user's primitive recreational experience would be reduced by sights and sounds of 36 acres of surface-disturbing activities, including construction and use of 4 miles of road in the northern portions of the WSA. The quality of primitive recreation would be reduced on up to 10 percent of the WSA for the duration of the activities which are expected to continue over the long term.

Except on existing roads and ways, no vehicular use is occurring or is likely to occur due to topographic restraints. Closure of an additional 10 miles of ways to motor vehicles would make recreation access to some areas of the WSA more difficult and could discourage some of the fishing (currently 1,500 visitor days per year) and hunting (currently 3,500 visitor days per year) use of the area. Visitor use may initially decrease but would eventually increase above current levels due to the popularity of the area.

As discussed for the No Action/No Wilderness Alternative, recreational use of the WSA is estimated to increase about 2 to 7 percent per year over the next 32 years in relation to population increases and current trends of recreational use. Management provided through a Wilderness Management Plan would attempt to regulate destructive increases in future recreation use, and the quality of the primitive recreation experience probably would not be negatively affected by the increased use. As primitive recreation use increases, commercial outfitting operations based on primitive recreational activities might be initiated, although none now exist in the WSA.

Conclusion: Primitive recreation values would be protected. The quality of primitive recreation would be reduced on up to 10 percent (6,891 acres) of the WSA. Use of vehicles in the WSA for hunting and fishing would be restricted which may initially result in reduced visitor use. However, recreational use would eventually increase above current levels.

- Impacts on Economic Conditions

Overall there would not be significant changes in present or short-term future trends of population, employment, and local income distribution. Because of restrictions placed on the use of resources under wilderness designation, there would be some loss in local potential long-term employment and Federal revenues currently provided by resource uses in the WSA (refer to Table 11), as well as loss of potential increases in income and Federal revenues that could occur with the No Action/No Wilderness Alternative.

Valid existing mining claims could be developed, but designation would preclude new claims from being established in the WSA. Precluding exploration and development of minerals would not alter existing economic conditions, but could limit future economic growth potential. Over the short term, there would be little difference as compared to the No Action/No Wilderness Alternative because valid claims could be developed and because the number of jobs provided at one time by mining operations would be small (20 jobs) and would be the same as with the No Action/No Wilderness Alternative.

There would also be a potential loss of $107,826 annually in Federal revenues from the 53,913 acres that could be leased for oil and gas speculation without designation. Even without wilderness designation it is unlikely that this acreage would be leased on a long-term basis because of low probability of oil and gas production.

Livestock use and ranchers' income would continue essentially as at present with $24,180 of livestock sales attributed to the AUMs within the Deep Creek Mountains WSA.

Recreational use and, therefore, recreation-related local expenditures could increase at a rate of 2 to 7 percent per year over the next 32 years. Use and expenditures would be approximately the same as with the No Action/No Wilderness Alternative. Expenditures could increase to between $28,700 and $252,970 per year over the short term.

Wilderness designation would eliminate most woodland product harvesting with related local values and Federal revenues. Present harvest from the WSA annually generates about $3,500 in woodland product values and $140 in Federal revenues.

Conclusion: Over the foreseeable future wilderness designation would not affect local economic conditions.

Partial Wilderness Alternative (Proposed Action) (57,384 Acres)

- Impacts on Wilderness Values

Wilderness designation of 57,384 acres would contribute to the preservation of the area's wilderness characteristics. Although in the foreseeable future, disturbance would be about the same as identified for the No Action/No Wilderness Alternative, this partial alternative would reduce the potential for surface-disturbing activities that could impair wilderness values over the long term in the designated area. Protection would be through management under VRM Class I (which generally allows for only natural ecological change), through ORV closure in the designated area including closure of 13.5 miles of ways, and through closure of the designated area to future mineral leasing and location. Size, naturalness, outstanding opportunities for solitude and primitive recreation (all 57,384 acres meet the standards), and the special features would be protected.

Direct loss of naturalness and opportunities for solitude and primitive recreation due to allowable surface disturbance from mineral exploration and development and from rangeland and wildlife projects, would occur on up to 20 acres within the designated portion and on up to 65 acres within the nondesignated portion. In the foreseeable future, sights and sounds from such development would reduce or eliminate wilderness values on adjacent areas including up to 20 percent (13,782 acres) of the WSA. Loss of these values would be confined mainly to the northern and northeastern portions of the WSA. Special features would be preserved because the direct disturbance would involve only 0.12 percent of the WSA and is not anticipated in areas where the Bonneville cutthroat trout, the giant stonefly, grapefern, archaeological sites, bristlecone pine, bighorn sheep, cougar, special status species, Class A scenery, or water features are found. The spring developments would benefit wildlife special features. In addition, appropriate measures would be taken to protect special status species prior to any surface-disturbing activity. It is projected that no negative impacts would occur to these species (refer to the Wildlife Including Special Status Species section).

Vehicular use would be restricted to 1.5 miles of existing ways and to about 4 miles of new mining road anticipated in the foreseeable future. Vehicular restrictions would improve opportunities for solitude and primitive recreation.

Overflights by military aircraft would continue to be an occasional annoyance that would detract from the opportunities for solitude in the WSA.

The extent that disturbance would occur over the long term and, therefore, the long-term loss of wilderness values that would occur is not accurately known. Loss would occur as intrusions increase.

Conclusion: Wilderness values would be preserved overall in the designated area which is about 80 percent of the WSA. In the foreseeable future, naturalness and opportunities for solitude and primitive recreation would be directly lost on 85 acres of the WSA, and opportunities for solitude and primitive recreation would be indirectly reduced in quality on up to 13,782 acres. Special features would be preserved.

- Impacts on Water Resources

The impacts of the Partial Wilderness Alternative on water resources would be essentially the same as described for the All Wilderness Alternative. All of the 21 miles of perennial streams, and one of the identified springs in the WSA, would be in the designated area.

Mineral exploration and development in the northern portion of the WSA would generally be shallow and would not significantly change groundwater quantity or quality.

Due to restrictions imposed by public water reserves and guidelines for protection of riparian habitat, potential surface disturbance of 85 acres would be located and controlled to avoid affects on the quality of surface waters.

In this WSA most of the streams originate on or near the WSA, and use of water upstream of the WSA is not likely. Major water use areas are outside and downstream of the WSA, and future use of water in

these areas would be not be affected, with the possible exception of the Birch and Trout Creek drainages. Future water developments inside the WSA would be restricted to protect wilderness values. However, the reservoir would be in the nondesignated area and could be constructed without consideration of wilderness values.

Conclusion: Partial wilderness designation would not significantly alter present or future water quality or uses.

• Impacts on Mineral and Energy Exploration and Production

• Leasable Minerals

Due to the small size of the potential leasable mineral deposits, the low certainty that these exist, and the low likelihood for exploration and development activities, this alternative is not expected to result in any significant loss in recovery of leasable minerals. In addition, 71 percent (11,526 acres) of the area open to leasing would not be designated wilderness.

The low gradient geothermal resource could be recovered on the 11,526-acre nondesignated area, although there is no market for the resource and it is unlikely it would be developed.

• Locatable Minerals

Approximately 114 existing mining claims covering 2,280 acres are within the area that would be designated wilderness. Exploration and production could continue on valid claims after wilderness designation under unnecessary or undue degradation guidelines, but with consideration given to wilderness values. After designation, lands in the WSA that are not under valid claims would be closed to prospecting and production (USDI, BLM, 1981b).

The majority of the locatable minerals are located in the northern portion of the WSA and would be in the nondesignated portion with this alternative. Presently, there are 181 mining claims covering some 3,620 acres in this area. This would allow for the development of these minerals without wilderness considerations. Approximately 60 acres of surface disturbance would occur over the short term in this area as existing mining claims are developed. This would occur in the Willow Springs and Clifton Mining Districts and would include construction of new roads and drill pads, as well as expansion of existing workings. Additional exploration and development could occur over the long term. The degree of development is unknown.

Locatable minerals have been recovered within the WSA in the past, and it is likely that exploration or development would continue in the future. This alternative would not designate the most likely mineral production areas.

Conclusion: Implementation of the Partial Wilderness Alternative would not significantly adversely affect mineral and energy resource exploration and production.

• Impacts on Wildlife Habitat and Populations Including Special Status Species

The proposed reservoir and other planned wildlife actions could be completed which would improve or maintain wildlife habitat. The 85 acres disturbed with this alternative are less than one-tenth of 1 percent of the WSA, and direct effects would be insignificant. Use of 4 miles of new road in the north end of the WSA would disturb deer during the winter season. Only small portions of the 8,000 acres of critical winter range would be affected mainly in corridors along the new roads. Deer losses would be slight. As discussed in the All Wilderness Alternative, no impacts are projected for special status species.

Conclusion: Wildlife habitat would be lost on less than 1 percent (86 acres) of the WSA. Populations would not be significantly reduced. No impacts would occur to special status species.

• Impacts on Livestock Management

The effect from designation of 57,384 acres of the WSA as wilderness on domestic livestock grazing would be essentially the same as the All Wilderness Alternative. Of the 1,209 AUMs allocated in the WSA, approximately 994 would be within the designated portion of the WSA and 215 would be in the nondesignated portion. The Trough Spring development would be within the nondesignated area and could be maintained and reconstructed without wilderness concerns. The Birch Springs development would be in the designated portion, but could be designed and installed compatible with wilderness protection criteria. Development of future roads or other livestock management facilities for use with 994 AUMs in the

designated portion could be restricted to preserve wilderness values. Of the 15 miles of existing vehicular ways, about 8.5 miles are within the area that would be designated. As compared to the All Wilderness Alternative, this would reduce but not eliminate the possibility of inconvenience to permittees who presently use these ways. In the designated area, predator control activities would be restricted to approved methods, and slight increases in predation on public, private, and State lands within and adjacent to the WSA would result. Predation on sheep in the Partoun and Thousand Peaks allotments is the most likely problem. Increased sheep losses would be slight because only 1 to 3 percent of either allotment is within the WSA, and several methods of predator control could be utilized.

Conclusion: Partial wilderness designation would necessitate changes in livestock management and supervision and cause inconvenience to 17 livestock permittees.

- Impacts on Recreation

In the short term, the quality of a user's primitive recreational experience would be reduced by 85 acres of surface-disturbing activities in the northern portions of the WSA. Additionally, noise and construction and use of 4 miles of road would reduce or eliminate the quality of primitive recreation on about 20 percent (13,782 acres) of the WSA for the duration of the activities which are expected to continue over the long term.

Because of topographic and management constraints, vehicular use would be concentrated on the anticipated 4 miles of new roads and 1.5 miles of vehicular ways that would remain available for vehicular access. Primitive recreation would only be negatively affected in the northern end of thə WSA. Visitor use may initially decrease because of vehicular restrictions that would occur with this alternative. Visitor use would eventually increase above current levels due to the popularity of the area. As primitive recreational use increases, commercial outfitters may start to utilize the WSA.

The future increase in recreational use of the WSA is unknown. However, based on a review of several projections (UDNRE, ORA, 1980; UDNRE, DPR, 1985; Utah Office of Planning and Budget, 1984; Jungst, 1978; Hof and Kaiser, 1981; and Cordell and Hendee, 1982) it is estimated that outdoor recreation in Utah will increase between 2 and 7 percent per year over the foreseeable future. At this rate, overall recreational use in the Deep Creek Range is expected to increase from 8,000 current visitor days per year to between 15,000 and 69,700 by the year 2020. Most of the use would be primitive in nature.

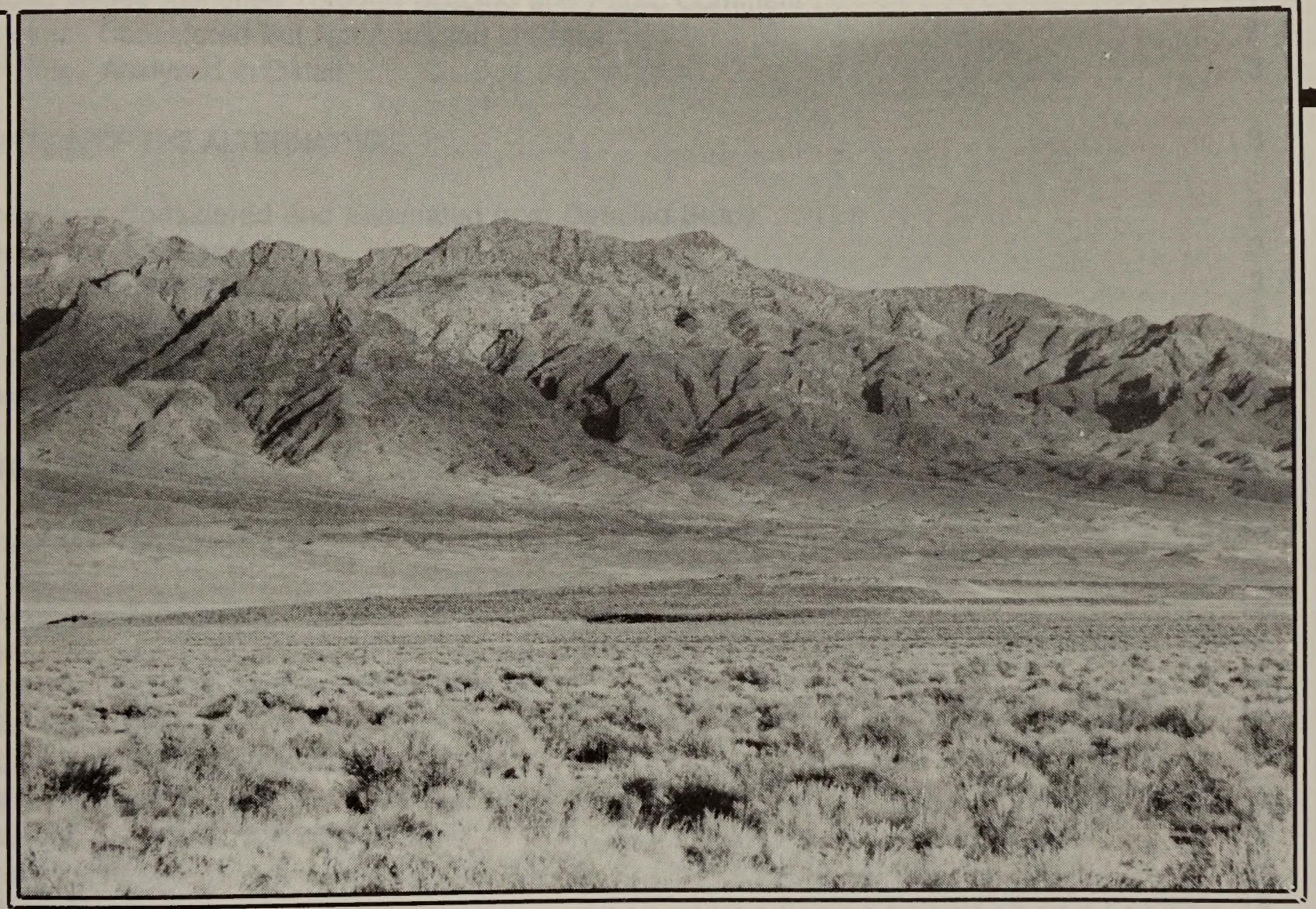
Conclusion: Primitive recreation values would be protected in the designated area. The quality of primitive recreation would be reduced on about 20 percent (13,782 acres) of the WSA. Vehicle restrictions may initially result in reduction of visitor use. However, recreational use would eventually increase above current levels.

- Impacts on Economic Conditions

Partial wilderness designation (57,384 acres) in the Deep Creek Mountains WSA is not expected to result in any changes in existing patterns and trends of population, employment, and local income distributions. The only perceptible difference in this alternative and the All Wilderness Alternative would be in mineral-related sales and revenues. This alternative would avoid all but one of the existing mines (except for two mines on private land in-holdings) and many of the claims. Therefore, with this alternative, designation would be less likely to conflict with the recovery of mineral resources within the WSA. As with the All Wilderness Alternative, precluding exploration and development of all presently unclaimed areas within the designated portion of the WSA would not alter existing economic conditions or conditions anticipated over the foreseeable future. It is anticipated that over the foreseeable future up to 20 persons would be employed in mining activities in the WSA with or without wilderness designation. This is less than 1 percent of the present employment of either Tooele or Juab Counties. It would be an even smaller percentage of the future work force in the counties. There would be a potential loss of $84,474 annually in Federal revenues from the 42,387 acres that, without designation, could be leased in the future. Even without wilderness designation, it is unlikely that this acreage would be leased on a long-term basis because of low probability of oil and gas production. Recreational use and recreation-related expenditures could increase to between $28,700 and $252,970 per year over the foreseeable future.

Conclusion: Over the foreseeable future, partial wilderness designation would not significantly affect local economic conditions.

Fish Springs WSA



FISH SPRINGS WSA

TABLE OF CONTENTS

INTRODUCTION 1

General Description of the Area 1
Changes for the Final EIS 1
Specific Issues Identified Through Scoping and Public Comment 1
Issues Considered But Not Analyzed in Detail 1
Issues Analyzed in Detail 3

DESCRIPTION OF THE ALTERNATIVES 3

Alternatives Considered and Eliminated from Detailed Study 3
Alternatives Analyzed 3
No Action/No Wilderness Alternative 3
All Wilderness Alternative 5
Partial Wilderness Alternative (Proposed Action) 7
Summary of Environmental Consequences 10

AFFECTED ENVIRONMENT 10

Wilderness Values 10
Air Quality 12
Geology and Topography 12
Soils 12
Vegetation Including Special Status Species 13
Water Resources 13
Wildlife Including Special Status Species 14
Forest Resources 15
Livestock and Wild Horses/Burros 15
Visual Resources 16
Cultural Resources 16
Recreation 16
Land Use Plans 16
Socioeconomics 17

ENVIRONMENTAL CONSEQUENCES OF ALTERNATIVES 18

No Action/No Wilderness Alternative 18
All Wilderness Alternative 19
Partial Wilderness Alternative (Proposed Action) 20

TABLE OF CONTENTS

FISH SPRINGS WSA

INTRODUCTION 1

General Description of the Area 1
Changes for the Final EIS 1
Specific Issues Identified Through Scoping and Public Comment 1
Issues Considered But Not Analyzed in Detail 1
Issues Analyzed in Detail 2

DESCRIPTION OF THE ALTERNATIVES 3

Alternatives Considered but Eliminated from Detailed Study 3
Alternatives Analyzed 3
No Action/No Wilderness Alternative 3
All Wilderness Alternative 5
Agency Wilderness Alternative (Proposed Action) 7

AFFECTED ENVIRONMENT 10

Summary of Environmental Consequences 10

Wilderness Values 10

ENVIRONMENTAL CONSEQUENCES OF ALTERNATIVES 11

Soil 11
Vegetation including Special Status Species 13
Water Resources 13
Wildlife including Special Status Species 14
Forest Resources 15
Livestock and Wild Horses/Burros 15
Visual Resources 16
Cultural Resources 16
Recreation 16
Land Use Plans 16
Socioeconomics 17

FISH SPRINGS WSA

(UT-050-127)

INTRODUCTION

General Description of the Area

The Fish Springs WSA consists of 52,500 acres of public land in northwestern Juab County, Utah. The nearest town is Callao, approximately 10 road miles to the west. The major feature of the WSA is the Fish Springs Range, where elevations rise abruptly from 5,000 feet in the foothills to 8,500 feet in the highest part. The WSA is approximately 16 miles long and 6 miles wide at its widest point.

Vegetation in the WSA includes a variety of shrubs and grasses at the lower elevations and scattered pinyon-juniper woodland at the higher elevations. There is some scattered white fir in isolated locations.

Climate is typical of the Great Basin, with limited precipitation, low relative humidity, high frequency of clear skies, and large annual and daily ranges in temperature. Precipitation in the WSA varies from 12 to 20 inches annually, depending on elevation. Temperatures range between -14 degrees Fahrenheit (F) to 105 degrees F depending on season and elevation.

Changes for the Final EIS

In addition to the changes noted in the Introduction to Volume II, the following changes specific to the WSA have been made since publication of the Draft EIS.

1. The boundary of the WSA as shown on Maps 1, 2, and 3 has been redrawn to correct errors in the Draft EIS maps. Changes were made in the following sections to align the WSA boundary with roads and powerlines that were identified as the boundary in the BLM Intensive Wilderness Inventory:

T. 11 S., R. 14 W., secs. 22, 23, and 30;
T. 12 S., R. 14 W., secs. 15, 22, 23, 26, and 35;
T. 13 S., R. 15 W., secs. 1, 11, 12, 13, 14, and 24;
T. 13 S., R. 14 W., sec. 31;
T. 14 S., R. 14 W., secs. 6 and 7;
T. 14 S., R. 15 W., sec. 12.

Private lands inadvertently omitted on the Draft EIS maps are shown in the northern end of the WSA. These changes did not require acreage adjustments because acreage calculations were based on the boundaries as shown in the inventory document and Final EIS.

2. The descriptions of the No Action/No Wilderness and Partial Wilderness Alternatives have been revised to coincide with the House Range RMP which has replaced the West Desert MFP since publication of the Draft EIS.

3. The anticipated surface disturbance presented in the Draft EIS (296 acres) was based on the assumption that all mineral and other resources potentially within the WSA would be developed sometime in the future without consideration of technical or economic feasibility. In response to public comments relative to the feasibility of developments, the disturbance estimates have been revised to focus on activities projected to be feasible within the foreseeable future (see Appendix 6 in Volume I). This resulted in a reduction of surface disturbance estimates from the 296 acres reported in the Draft EIS to 2 acres of surface disturbance for the Final EIS.

4. A UDWR proposal for transplanting Desert bighorn sheep into the WSA, and construction of three guzzlers in support of the transplant, has been added to the description of the alternatives and the analysis.

Specific Issues Identified Through Scoping and Public Comment

- Issues Considered But Not Analyzed in Detail

In addition to the issues discussed and eliminated from further consideration in the Introduction to Volume II (i.e., impacts on air quality, geology and topography, soils, water rights, land use plans and policies), the following issues or impacts specific to the Fish Springs WSA were considered but are not analyzed in detail in the Final EIS for the reasons described below.

STATEWIDE
POCKET MAP
WSA
NO. 4
SEE VOL.I

FISH SPRINGS WSA

1. Vegetation Including Special Status Species: Estimates of surface disturbance without wilderness designation have been revised downward from the 296 acres reported in the Draft EIS to 2 acres of surface disturbance in the Final EIS. Given this new scenario, the impacts of direct disturbance of vegetation would not occur with any of the alternatives. No threatened, endangered, or proposed threatened or endangered plant species are known to occur within the WSA. In any event, BLM would conduct site-specific clearances of potentially disturbed areas and consult with the FWS concerning impacts on threatened or endangered plant species. Therefore, impacts on vegetation are not analyzed in detail for the Fish Springs WSA.

2. Water Resources: There are no perennial streams and only one spring and one well in the Fish Springs WSA. Therefore, impacts on water uses and quality are not significant issues for analysis in the Final EIS.

3. Mineral Resources: The public has expressed concern that wilderness designation would interfere with or prevent mineral exploration, development, and production.

There are no oil and gas leases within the WSA. Potential oil and gas deposits are small with a very low certainty that they exist.

Even though there are 108 mining claims in the WSA, BLM believes that projected locatable mineral deposits are small and or could not be economically developed in the foreseeable future (see Appendix 6 in Volume I). More accessible deposits of salable minerals exist outside the WSA. For these reasons, it is determined that mineral exploration or development would not occur with or without wilderness designation. Therefore, impacts on mineral and energy exploration and production are not analyzed in detail in the Final EIS.

4. Wildlife Including Special Status Species: The public is concerned that without wilderness designation mineral or other developments would destroy wildlife habitat and lead to reductions in wildlife populations. They are also concerned that use of ORVs would disturb wildlife and destroy habitat. The Fish Springs WSA provides habitat for a variety of animal species, but populations are low and no one species can be described as abundant. Two endangered and seven other special status species may be found in the WSA. A bighorn sheep transplant is proposed by UDWR and could be carried out with any of the alternatives. Because no mineral developments are expected in the WSA, wildlife habitats would not be lost. Terrain and surface features generally restrict the use of ORVs to 5 miles of ways in two locations, and ORV use is not an end in itself but occurs in conjunction with other activities. Recreation use is very low (estimated 50 visitor days use per year). Given these conditions, potential impacts on wildlife habitat and populations are not significant issues for the Final EIS.

5. Forest Resources: The only forest resources in the WSA are 17,740 acres of noncommercial pinyon-juniper woodland. There is limited access and low demand. For these reasons, impacts on forest resources are not significant issues for analysis in the Final EIS.

6. Visual Resources: As discussed above for vegetation, only 2 acres of surface disturbance are projected for the WSA in the Final EIS. Therefore visual resources would not be significantly affected. Visual resources are not addressed in the Final EIS as a separate topic, but are addressed in relation to naturalness in the Wilderness Values sections.

7. Cultural Resources: Only one cultural resource site has been recorded in the Fish Springs WSA. Only 2 acres of surface disturbance is projected in the WSA. Cultural resources could be destroyed by visitor use, however, use is light. Terrain and surface features limit vehicle use to the 10 miles of ways inside the WSA. Additionally, inventories for the purpose of site recordation and mitigation of impacts would take place prior to any surface disturbance in the future. Given these conditions, impacts on cultural resources are not a significant issue for the Fish Springs WSA.

8. Recreation: The public has expressed concern that wilderness designation would change recreational use from motorized to primitive, or conversely, that without wilderness designation motorized recreation will eliminate or reduce opportunities for primitive recreation. Recreational use of the Fish Springs WSA is light (estimated 50 visitor days per year), and would remain primitive with or without wilderness designation due to the terrain of the WSA and limited access. Therefore, impacts on recreation use would not be significant and they are not analyzed in detail in the Final EIS.

9. Economic Conditions: The public, including State and local government, is concerned that wilderness designation would preclude mineral or other economic developments and adversely affect local economic

conditions. Others believe that primitive recreation use would increase following wilderness designation and would contribute to the local economy.

There are no existing or anticipated mineral developments or proposals for lands or realty activities which would be impaired with or without wilderness designation. Because no economic developments are expected, and because recreational use is only 50 visitor days per year, impacts on economic conditions are not significant issues for the Final EIS.

- Issues Analyzed in Detail

The significant issues for the Fish Springs WSA are:

1. Impacts on the wilderness values of naturalness, opportunities for solitude and primitive recreation, and special features.

2. Impacts on livestock management.

3. Impacts on Air Force operations.

Comments made during the public comment period for the Draft EIS addressed a variety of topics including inventory phase of the Wilderness Review and assessment of the value of benchlands, excluded in BLM's proposed action, to wilderness and wildlife.

See Volume VII-B for responses to general comments applicable to all WSAs and/or the Statewide analysis and Volume VII-C, Section 4, for responses to specific comments about the Fish Springs WSA.

DESCRIPTION OF THE ALTERNATIVES

Alternatives Considered and Eliminated from Detailed Study

During scoping it was suggested that an alternative excluding lower parts of the Fish Springs WSA be analyzed to reduce conflict with livestock use areas. The partial alternative previously described by BLM accomplishes this objective; therefore, another partial alternative was not included for detailed study.

An alternative to designate 45,000 of the 52,500 acres in the WSA was suggested in comments on the Draft EIS. This would be 11,160 acres larger than the BLM proposed Partial Wilderness Alternative. The stated purpose of including the additional acreage was to protect important wildlife habitat adjacent to the Fish Springs Wildlife Refuge in the benchlands of the WSA and to make the boundary more manageable. This alternative was considered, but is not analyzed in detail in the Final EIS because the benchlands are not particularly important wildlife habitat, and because the BLM proposed boundary follows identifiably survey lines that, in this area, can be located with more certainty than contour lines.

Alternatives Analyzed

Three alternatives are analyzed for this WSA: (1) No Action/No Wilderness; (2) All Wilderness (52,500 acres); and (3) Partial Wilderness (Proposed Action) (33,840 acres). A description of BLM's management practices under each alternative follows. Where management intentions have not been clearly identified, assumptions are made based on management projections under each alternative. These assumptions are indicated in each case. The assumed BLM management actions described in the Introduction to Volume II are also applicable.

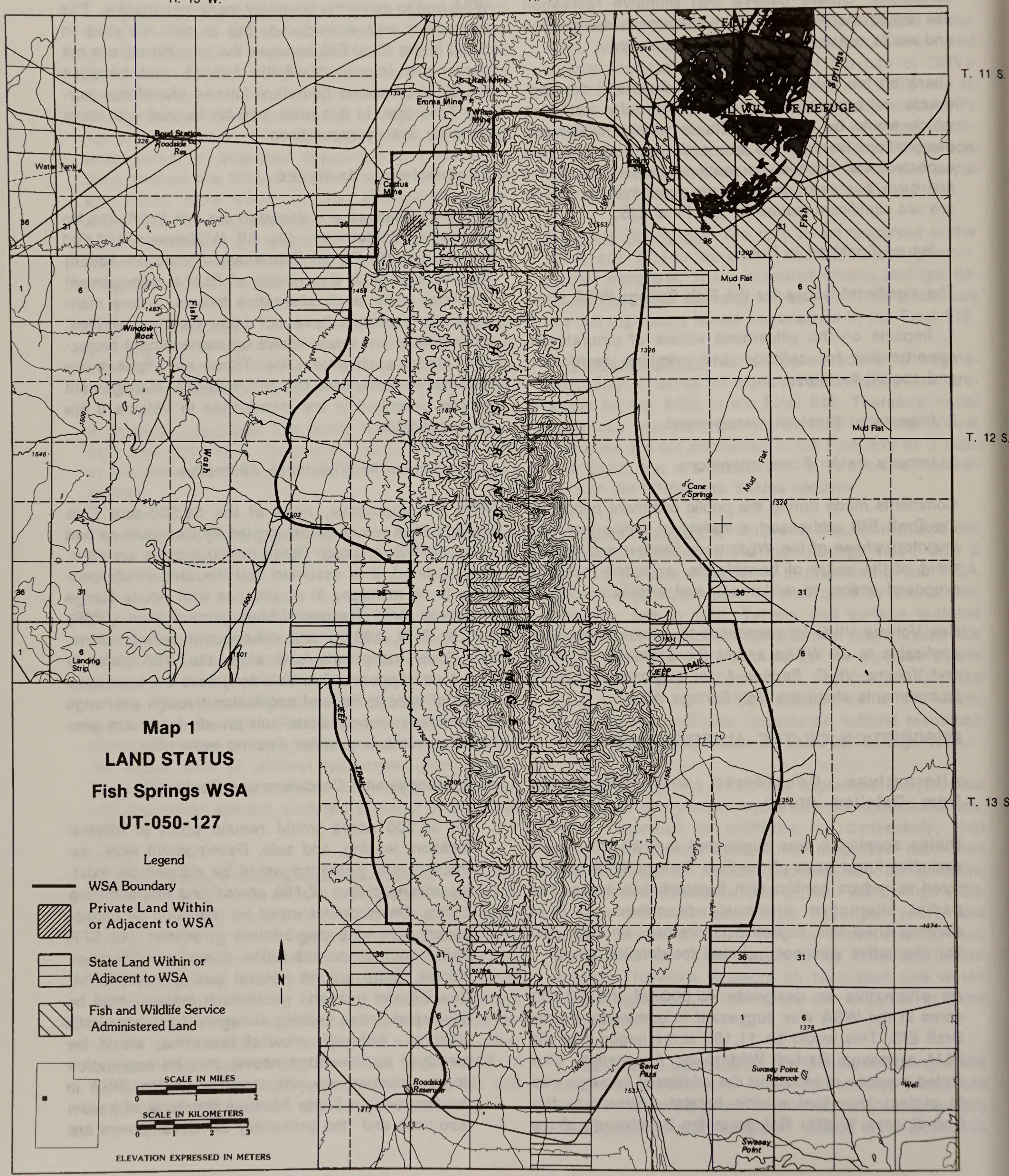
- No Action/No Wilderness Alternative

With this alternative, none of the 52,500-acre Fish Springs WSA would be designated by Congress as part of the NWPS. Although BLM's land use plans are regularly updated, it is assumed that the area would continue to be managed in accordance with House Range Resource Area Resource Management Plan (RMP) (USDI, BLM, 1987c) and subsequent activity plans. The State and private land within the WSA (refer to Map 1 and Appendix 3 in Volume I) have not been identified for special Federal acquisition through exchange or purchase. In-held State and private lands are analyzed as remaining under existing ownership.

- Management Conditions and Constraints

All 52,500 acres would remain open to mineral location, leasing, and sale. Development work, extraction, and patenting would be allowed on existing mining claims (2,160 acres) and future mining claims. Development would be regulated by unnecessary or undue degradation guidelines (43 CFR 3809) without consideration given to wilderness values. There are no mineral leases in the WSA. New oil and gas and geothermal leases could be developed under Leasing Category 1 (standard stipulations). Although mineral resources would be managed as described above, mineral exploration or development are not projected in the WSA in the foreseeable future because the level of known resources and the probability of development are

FISH SPRINGS WSA



Map 1
LAND STATUS
Fish Springs WSA
UT-050-127

Legend

- WSA Boundary
- Private Land Within or Adjacent to WSA
- State Land Within or Adjacent to WSA
- Fish and Wildlife Service Administered Land

ELEVATION EXPRESSED IN METERS

too low to support a development assumption. See Appendix 6 in Volume I for a detailed discussion regarding mineral and energy resources exploration and development projections.

The present domestic livestock grazing use in the WSA would continue as authorized in the RMP (2,534 AUMs). Existing rangeland developments (one developed spring, one developed well, and 0.75 mile of fence) would continue to be used and maintained as in the past.

Approximately 2,700 acres on the west side of the WSA would continue to be managed under the West Desert Habitat Management Plan (HMP) (USDI, BLM, 1980c) to preserve wildlife values. UDWR has identified 34,850 acres of potential range in the WSA as suitable for the reintroduction of desert bighorn sheep, which would be allowable under this alternative. Three guzzlers would be installed to support this transplant.

A public water reserve of 34 acres that segregates the land from public land law and mining of nonmetalliferous minerals would continue on the northeastern border of the WSA.

The 52,500 acres, including the 10 miles of way, would remain open for ORV use in accordance with the House Range RMP. Vehicle use would continue to be restricted by terrain and surface features to the 10 miles of vehicular way in the WSA.

Private, commercial, and military aircraft use of airspace over the WSA would continue as at present. A USAF High Accuracy Multiple Object Tracking Station (HAMOTS) would remain in the WSA.

The entire WSA would continue to be open to woodland product harvest. There is no harvest of woodland products at the present time, nor is any expected because the resource is scattered and there is limited access.

The area would continue to be managed under VRM Class II on 30,878 acres and Class IV on 21,622 acres.

- Action Scenario

Given BLM management actions described above and the resources described in the Affected Environment, BLM anticipates that implementation of the No Action/No Wilderness Alternative would result in only 2 acres of surface disturbance in the foreseeable future. This disturbance would result from construction of three guzzlers in the central portions of the WSA for use by desert bighorn sheep. The sheep are not presently in the WSA but would be transplanted as proposed by the UDWR. Construction of the guzzlers would not require road access.

No locatable or leasable mineral resource exploration or development is anticipated in the foreseeable future. No other rangeland, wildlife habitat, or watershed improvement projects are planned.

No disturbance from ORV activity is projected due to terrain constraints and remoteness of the WSA.

Recreation use is anticipated to increase over the current estimated use of 50 annual visitor days at a rate of 2 to 7 percent per year. As much as 10 percent of the use would continue to involve vehicular access on 10 miles of ways.

- All Wilderness Alternative

With this alternative, all 52,500 acres of the Fish Springs WSA would be designated by an act of Congress as part of the NWPS (refer to Map 2). It would be managed in accordance with the BLM Wilderness Management Policy (BLM Manual 8560) to preserve its wilderness character.

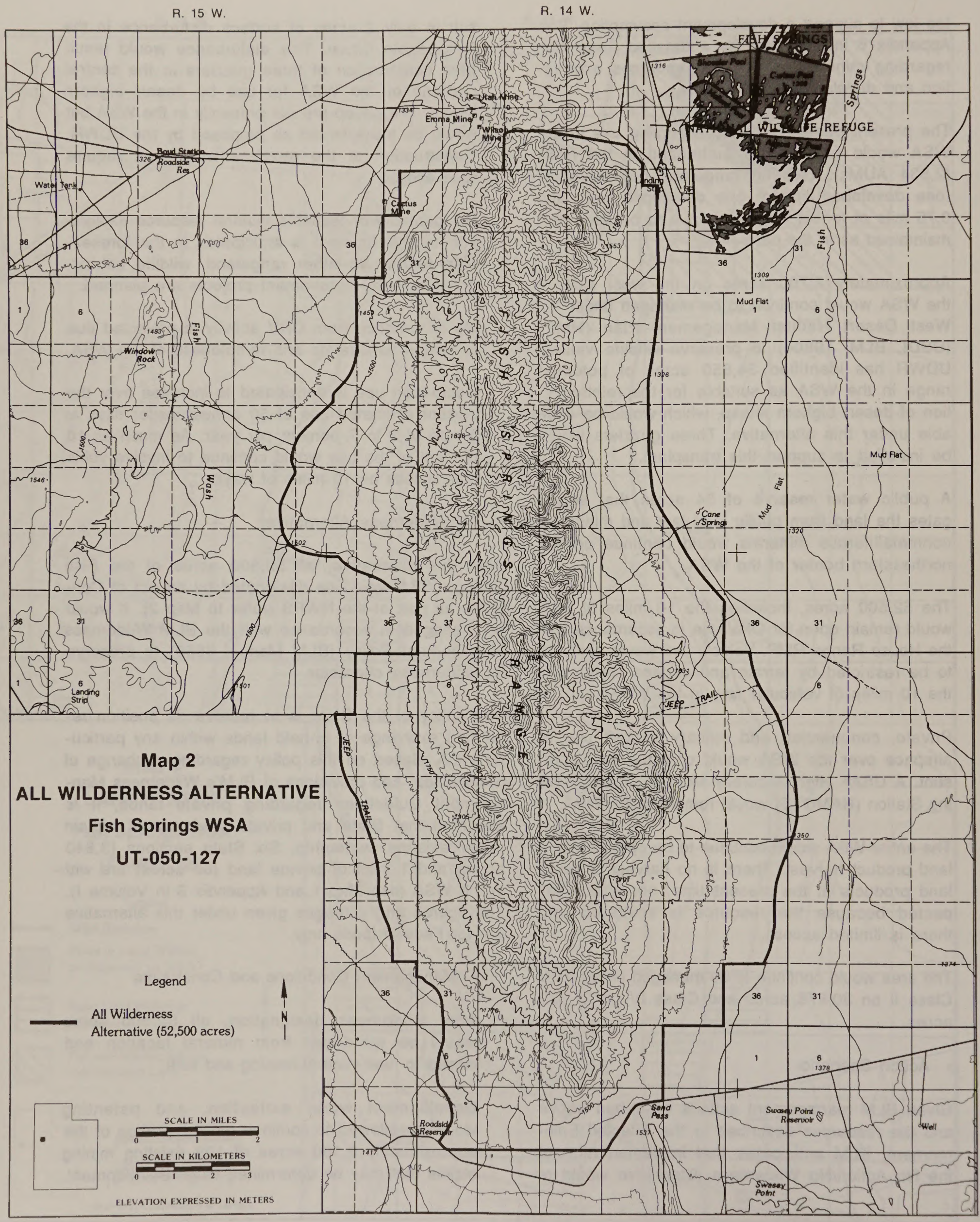
The policy of the State is to reserve its position regarding exchange of in-held lands within any particular WSA. Based on this policy regarding exchange of State lands, and provisions of BLM's Wilderness Management Guidelines regarding private lands, it is assumed that State and private lands would remain under existing ownership. Six State sections (3,840 acres) and 1 tract of private land (80 acres) are within the WSA (see Map 1 and Appendix 3 in Volume I). The figures and acreages given under this alternative are for Federal lands only.

- Management Conditions and Constraints

After wilderness designation, all 52,500 acres would be withdrawn from mineral location and closed to new mineral leasing and sale.

Development work, extraction, and patenting would be allowed to continue on that portion of the approximately 2,160 acres of 108 existing mining claims that may be determined valid. Development

FISH SPRINGS WSA



Map 2

ALL WILDERNESS ALTERNATIVE

Fish Springs WSA

UT-050-127

Legend

All Wilderness Alternative (52,500 acres)

N

SCALE IN MILES
0 1 2

SCALE IN KILOMETERS
0 1 2 3

ELEVATION EXPRESSED IN METERS

would be regulated by unnecessary or undue degradation guidelines (43 CFR 3809) with wilderness as a consideration. Locatable mineral exploration or developments are not expected because of the projects' low resource levels and low probability of their development (see Appendix 6 in Volume I). There are no oil and/or geothermal leases in the WSA and new leases would not be issued. Therefore, leasable mineral exploration or development would not occur.

Present domestic livestock grazing would be allowed to continue as authorized in the House Range RMP. The 2,534 AUMs in the WSA would remain available to livestock as presently allotted. The one developed well, one developed spring and 0.75 mile of fence in the WSA would continue to be used and maintained in the same manner as in the past based on practical necessity and reasonableness.

It is assumed that three guzzlers would be designed and installed consistent with wilderness protection criteria for support of the bighorn sheep transplant. It is assumed that a 34-acre public water reserve on the northern boundary of the WSA would remain in effect.

The UDWR has identified 34,850 acres as suitable habitat for a Desert bighorn sheep transplant. Such a transplant would be allowable under this alternative. At this time, the only wildlife developments planned in this WSA are three guzzlers for support of the proposed bighorn sheep transplant. It is assumed that the guzzlers would be constructed in accordance with wilderness protection criteria.

The entire 52,500-acre area would be closed to ORV use except for users with valid existing rights if approved by BLM in accordance with 43 CFR 8560 provisions. About 10 miles of existing vehicular ways would not be available for vehicular use except as indicated above. About 8 miles of the WSA boundary follow existing gravel, dirt, and paved roads that would remain open to vehicular travel.

A USAF HAMOTS would be removed from the WSA.

- Action Scenario

Given the BLM management actions described above and the resources described in the Affected Environment, BLM projects 2 acres of surface disturbance from construction of three guzzlers for transplanted desert bighorn sheep in the foreseeable future. The guzzlers would be designed and installed in conformance with wilderness protection guidelines. Road access would not be required.

No development of existing mining claims is projected. Implementation of the All Wilderness Alternative would preclude new mining claim location and mineral leasing. Therefore, no locatable or leasable mineral resource exploration or development would occur. No other rangeland, wildlife habitat, or watershed improvement projects are planned for the WSA.

No disturbance related to ORV activity is anticipated due to wilderness management and terrain constraints.

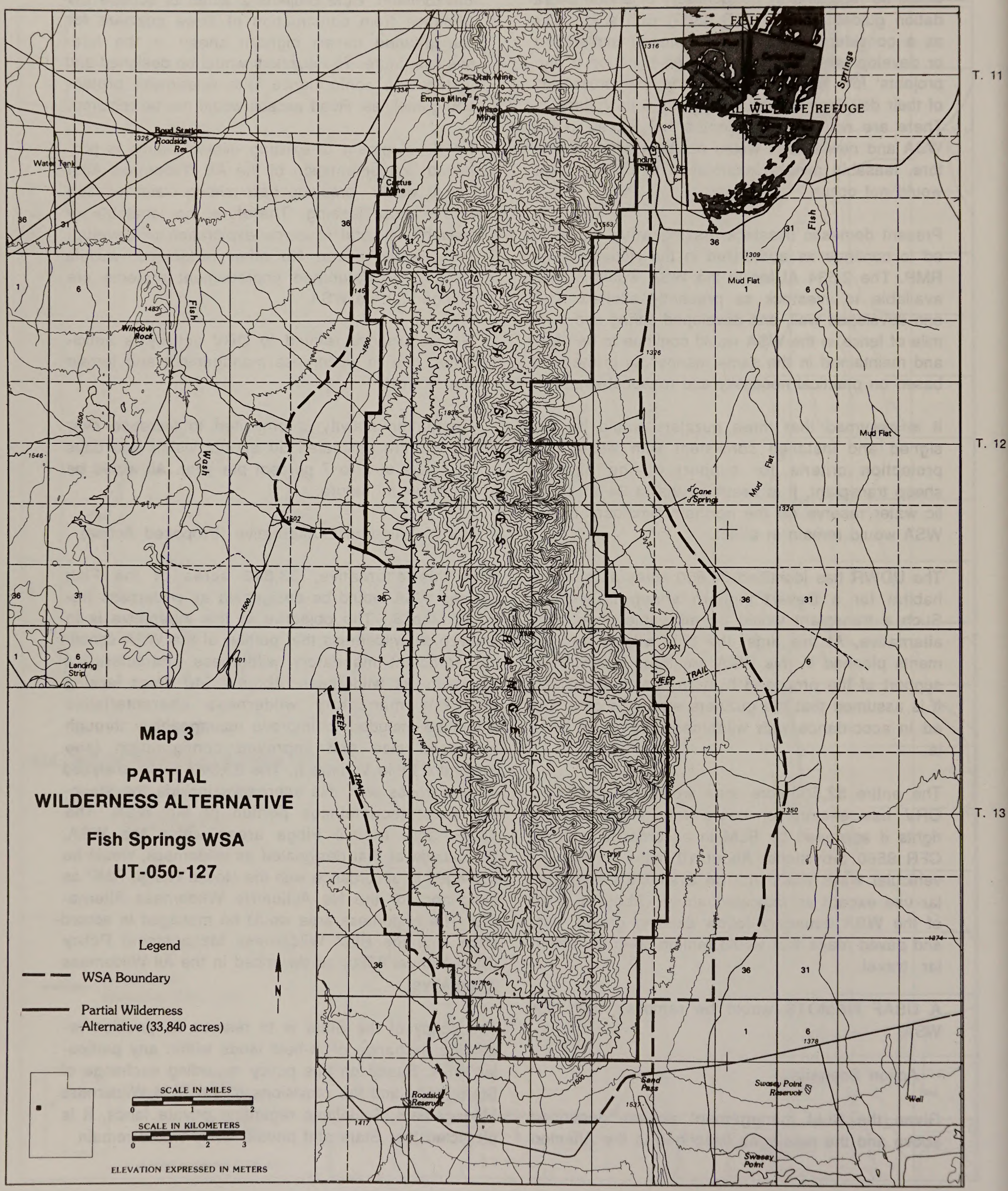
Recreation activity is projected to increase over the current estimated 50 annual visitor use days at a rate of 2 to 7 percent per year. All would be primitive in nature.

- Partial Wilderness Alternative (Proposed Action)

With this alternative, 33,840 acres of the Fish Springs WSA would be designated as wilderness (refer to Map 3.) The objective of this alternative is to analyze as wilderness that portion of the WSA containing sufficient mandatory wilderness characteristics to qualify as wilderness. About 6,540 acres lacking sufficient mandatory wilderness characteristics would be included to improve manageability through increased size and improved configuration (see Appendix 11 in Volume I). The 33,840 acres analyzed as wilderness with this alternative include the steepest, most mountainous portion of the WSA. The 18,660-acre foothill fringe areas within the WSA, but outside of that designated as wilderness, would be managed in accordance with the House Range RMP as described for the No Action/No Wilderness Alternative. The wilderness area would be managed in accordance with the BLM Wilderness Management Policy (BLM Manual 8560) as described in the All Wilderness Alternative.

The policy of the State is to reserve its position regarding exchange of in-held lands within any particular WSA. Based on this policy regarding exchange of State lands and the provisions of the BLM Wilderness Management Guidelines regarding private lands, it is projected that State and private lands would remain

FISH SPRINGS WSA



under existing ownership. There are 2,560 acres in four sections of State land in the portion of the WSA that would be designated, as well as 80 acres of private land in one parcel. The figures and acreages described for this alternative are for Federal lands only.

- Management Conditions and Constraints

The 33,840-acre wilderness would be withdrawn from mineral entry and closed to new mineral leasing and sale. Development work, extraction, and patenting would be allowed to continue on approximately 1,920 acres of existing mining claims, provided they are valid. There are no oil and gas or geothermal leases in the WSA. New leases would not be issued in the designated portion. The 18,660 acres not designated wilderness would be open to future mineral location, leasing, and sale. Development work, extraction, and patenting of existing mining claims (approximately 240 acres) and future mining claims could occur if claims are valid. The area not designated would be managed as leasing Category 1 (standard stipulations). Development of future leases could be developed without concern for wilderness values. Although minerals would be managed as described above, mineral developments are not projected because the level of known resources and probability of development are too low to support a development assumption (see Appendix 6 in Volume I).

Domestic livestock grazing would continue in the 33,840-acre wilderness area. The AUMs in the area would remain available to livestock as presently allotted. Few, if any, of the 2,534 AUMs are utilized in this portion of the WSA. In the 18,660-acre nonwilderness area, grazing use would continue as authorized in the House Range RMP. Most, if not all, of the 2,534 AUMs are utilized in this portion of the WSA. The existing livestock improvements are also in the nondesignated area and could be maintained as in the past.

Approximately 34 acres of the public water reserve that would be in the designated portion would be maintained.

Approximately 90 percent of the potential bighorn sheep habitat and three planned bighorn sheep guzzlers would be located in the designated portion of the WSA. The bighorn sheep transplant could occur with this alternative. The guzzlers would be designed and installed compatible with wilderness protection criteria.

The mountains that would comprise the wilderness area would be closed to ORV use. Approximately 2 miles of existing ways are located in the area that would be designated wilderness. Approximately 8 miles of ways located in the nondesignated portion of the WSA and the existing roads that border the WSA would remain open to vehicular travel and would continue to be available for vehicular use.

A USAF HAMOTS would be removed from the designated area.

Harvest of forest products in the wilderness area would not be allowed except for harvest of pinyon nuts or noncommercial gathering of dead-and-down wood, if accomplished by other than mechanical means. The remaining area would be open to woodland harvest. Harvest is not expected because of low demand, lack of access, and the scattered location of the trees.

Visual resources in the wilderness area would be managed in accordance with VRM Class I standards, which generally allow for only natural ecological change. The remaining area would be managed as VRM Class II on 1,268 acres and Class IV on 17,392 acres.

- Action Scenario

Implementation of the Partial Wilderness Alternative would result in 2 acres of surface disturbance from construction of three guzzlers for transplanted desert bighorn sheep in the designated portion of the WSA. The guzzlers would be designed and installed in conformance with wilderness protection guidelines. Road access would not be required. New mining claim location and mineral leasing would be precluded in the designated portion. Mineral exploration and production are not expected in the nondesignated portion in the foreseeable future. Therefore, no mineral resource exploration or development could occur. No other rangeland, wildlife habitat, or watershed improvement projects are planned.

No disturbance from ORV activity is projected due to management and terrain constraints.

Recreation use is projected to increase over the current estimated use of 50 annual visitor use

days at a rate of 2 to 7 percent per year. As much as 10 percent of the use would continue to involve vehicular access on 8 miles of ways.

Summary of Environmental Consequences

Table 1 summarizes the environmental consequences of the alternatives analyzed in detail.

AFFECTED ENVIRONMENT

This section describes the overall environmental setting. This information allows for independent assessment by the public as required by the CEQ guidelines and provides a data base for the cumulative Statewide analysis found in Volume I, as well as for the environmental consequences of alternatives described in this WSA analysis. Unless otherwise indicated, information for this section was taken from BLM staff specialists, technical reports, and file documents, including land use plans.

Wilderness Values

- Size

The WSA is approximately 52,500 acres in size. It is approximately 16 miles long and 6 miles wide at its widest point.

- Naturalness

The main portion of the Fish Springs Range is in a completely natural condition with no human intrusions. The lower slopes on the margin of the WSA have a variety of vehicular ways in various stages of rehabilitation by natural processes. A USAF HAMOTS was installed in the WSA in 1979. Placement of this system disturbed a 40-foot diameter circle. The system is nonimpairing under Interim Wilderness Management Guidelines and BLM has stipulated that it be removed if the WSA is designated as Wilderness. Therefore, it has not affected the naturalness of the WSA. A cruise missile crashed in the WSA in 1984. The crash site was cleaned and rehabilitated to an unnoticeable condition. All intrusions are substantially unnoticeable in the area as a whole. Thus, the entire 52,500-acre WSA meets the Wilderness Act criteria for naturalness.

- Solitude

Opportunities to find solitude (i.e., a secluded spot away from others) within the WSA are influenced by size, topography, vegetation, and the absence of distracting sights and sounds.

The WSA is of sufficient size to allow visitors to be secluded from one another.

The Fish Springs Range is long and narrow, bisected by narrow canyons and rocky drainages ending in large alluvial fans. These canyons are often deep and winding, screening visitors from each other. Steep slope and ridges offer other possibilities for avoiding other people in the vicinity. Topography does not provide for solitude on the lower benches.

Vegetation is generally sparse. Isolated stands of pinyon-juniper and fir are found at the higher elevations which assist in providing solitude in those locations. Vegetation screening is very limited on the benchlands.

The Fish Springs WSA is within the South Range of the USAF's Utah Test and Training Range. The South Range runs approximately north to south from the southern boundary of the Bonneville Salt Flats to the San Francisco Mountains and east to west from the Sheeprock Mountains to 17 miles within Nevada. This is one of the Nation's busiest military air spaces. There are 15,000 aircraft including all types of tactical fighters and bombers in the area. There are 100 to 150 (conservative estimate) aircraft flights per day over the South Range 6 days per week. Flights occur as low as 100 feet above the ground surface. Speeds are subsonic except in the very northern portion of the test range in the area around Ibapah, where supersonic speeds are also reached. Heaviest use areas are in the northern part of the test range which includes the Fish Springs WSA (Davies, 1985). Aircraft occasionally fly directly over the WSA, and these overflights can be a source of annoyance to visitors seeking solitude. Most of these overflights are usually not directly over the WSA and are subsonic in this area. Military flights are occasional off-site intrusions (sight and sound) that detract from, but generally do not eliminate, the overall opportunities for solitude.

Traffic on nearby roads is also of short duration and is not considered to have a significant effect on solitude in the WSA.

Overall, the opportunities for finding solitude is outstanding in the central part of the WSA (48 percent or 25,200 acres). The opportunity for finding solitude is less than outstanding on 52 percent

Table 1
Summary of Environmental Consequences

Resource	Alternatives		
	No Action/No Wilderness	All Wilderness (52,500 Acres)	Partial Wilderness (33,840 Acres) (Proposed Action)
Impacts on Wilderness Values	Wilderness values would not be protected by wilderness designation. In the foreseeable future, naturalness and opportunities for solitude and primitive recreation would be slightly reduced in quality on 2 acres due to guzzler development. Special features would not be negatively affected. Vehicular use of 10 miles of ways would detract from opportunities for solitude and primitive recreation.	Wilderness values would be preserved. In the foreseeable future, naturalness and opportunities for solitude and primitive recreation would be slightly reduced in quality on 2 acres due to guzzler development. Closing all ways to vehicular use would enhance opportunities for solitude and primitive recreation. Special features would be preserved.	Wilderness values would be preserved in the designated area which is about 64 percent of the WSA. In the foreseeable future, naturalness and opportunities for solitude and primitive rec-reation would be slightly reduced in quality on 2 acres due to guzzler development. Vehicular use of 8 miles of ways would detract from opportunities for solitude and primitive recreation. Spe-cial features would be preserved.
Impacts on Livestock Management	Livestock grazing would not be affected because access and management actions would continue as at present.	Wilderness designation would result in restrictions on access and inconvenience to three livestock permittees and slightly increase costs of management and predation on livestock.	Partial wilderness designation would not affect livestock management since the grazing use is made in the nondesignated area.
Impacts on Air Force Operations	A U.S. Air Force High Accuracy Multiple Object Tracking Station (HAMOTS) would remain in the WSA.	A U.S. Air Force HAMOTS would be removed from the WSA.	A U.S. Air Force HAMOTS would be removed from the WSA.

(27,300 acres) of the WSA, primarily in the benchland areas.

- Primitive and Unconfined Recreation

Opportunities for primitive, unconfined recreation were evaluated by considering miles of hiking routes in relationship to the WSA's size, the number of primitive recreational opportunities present, and the quality of these opportunities. As discussed in the Recreation section, this WSA was determined to have opportunities for 13 different activities. However, only one of the activities, geologic sightseeing, is considered of better than average quality. Opportunities for this activity are best in the rugged central portion of the WSA as opposed to the surrounding benchlands.

These factors, when considered together, indicate that the opportunities for primitive, unconfined recreation meet the standards set by the Wilderness Act on 25,200 acres in the central part of the range but not along the lower benchlands comprising 27,300 acres.

- Special Features

A special feature identified during the wilderness inventory is attenuation faulting. The WSA is considered an excellent example of attenuation faulting, a geologic process of interest to geologists. There are approximately 28,127 acres within the central portion of the WSA where this phenomena can be observed. In addition, the WSA has resource values that, although not identified as such during the wilderness inventory, could be considered special features. There are two animal species (bald eagle and peregrine falcon) listed as endangered. There are seven other special status species (golden eagle and six Category 2 candidate animal species) found in the WSA. Desert bighorn sheep when reintroduced, would be an animal species associated with wilderness.

- Diversity

This is in the Intermountain Sagebrush Province Ecoregion. It has the PNV types of juniper-pinyon woodland and saltbush-greasewood (refer to the Vegetation Including Special Status Species section for more discussion on ecoregion and PNV types). To see how the ecoregion and PNV types represented by this WSA compare Statewide and nationally with existing and other potential NWPS units, refer to the Wilderness Values section in Volume I.

This WSA is within a 5-hour drive from three standard metropolitan statistical areas. These are Salt Lake City-Ogden, Utah; Provo-Orem, Utah; and Las Vegas, Nevada.

Air Quality

The WSA is located in a PSD Class II area under the provisions of the Clean Air Act, as amended. The nearest PSD Class I area (less permissive to air quality deterioration) is Capitol Reef National Park, approximately 160 air miles to the southeast. Existing air quality is generally excellent throughout the year. The WSA is located near the center of the area with the highest visual range (70+ miles) in the United States (EPA, 1979).

Geology and Topography

The Fish Springs Range is located in the Great Basin section of the Basin and Range Physiographic Province. It is a north to south trending, blockfaulted mountain range, over 15 miles in length.

Bedrock exposed in the WSA consists of sedimentary rocks of Cambrian, Ordovician, Silurian, and Devonian ages (Hintze, 1980a). The Fish Springs Range is a tilted block fault which originated in middle to late Tertiary time. North- and west-trending faults are abundant and well exposed throughout the WSA. Attenuation faults, a type of horizontal bedding plane fault, are also present in the WSA.

Elevations average 5,000 feet in the foothills and rise abruptly to 8,500 feet in the highest part of the range. The central portion of the range is the most rugged and is characterized by numerous craggy peaks, ledges, large basins, and steep slopes. The margin of the WSA is less rugged.

Soils

There is considerable variation of soil types in the WSA depending on elevation, slope, and parent material. Generally, the mountain slopes are dry, dark-colored, cobbly loams while the lower elevations are alkaline, calcareous loams and loamy sand. There are no serious erosion condition problems in the WSA. The entire WSA is in a slight erosion condition class with an estimated average annual erosion rate of 0.6 cubic yards per acre. Erosion condition was determined using soil surface factors (refer to Glossary).

If sediment yield is considered at 0.6 cubic yards per acre per year (USDI, BLM, 1973; and Leifeste, 1978), the total annual sediment yield now occurring in the WSA would be 31,500 cubic yards. Reclamation of disturbed areas depends on such things as the soils, nature of the disturbance (i.e., mining processes used), and climatic conditions. Reclamation potential and needs can be determined only on a site-specific basis. The deep, dark-colored soils in higher areas of the WSA have a greater potential for reclamation than the alkaline, calcareous soils found in the valley bottoms.

Vegetation Including Special Status Species

Vegetation in the WSA is typical of the region with a variety of shrubs and grasses at the lower elevations and scattered pinyon-juniper woodland at the higher elevations. There is some scattered white fir in isolated locations. Existing vegetation types are summarized in Table 2.

Table 2
Existing Vegetation Types

Existing Vegetation Type	Acres	Percent of WSA
Utah Juniper	17,640	34
Shadscale, horsebrush	17,325	33
Sagebrush	10,238	20
Shadscale-rabbitbrush	3,832	7
Pickleweed	2,310	4
Saltgrass	1,155	2
Total	52,500	100

Source: USDI, BLM, 1987c.

No threatened, endangered, or other special status plant species are known to occur within or near the WSA boundaries (see Appendix 4 in Volume I for details). Due to the scarcity of water, there is no riparian vegetation within the WSA.

The WSA is in the Intermountain Sagebrush Province Ecoregion as shown on the Bailey-Kuchler ecosystems map (USDI, USGS, 1978). The PNV types of the WSA are listed on Table 3.

Water Resources

There are no known perennial streams in the WSA, although there are several large drainages in the WSA that can have intermittent flows during occasional wet periods. There is one spring (considered unsuitable for human consumption) and one well. Both are used by cattle. The area is open to appropriations with each application examined for possible interference problems and speculative nature. The spring is managed as State Beneficial Use Class 4, protected for livestock watering.

Table 3
Potential Natural Vegetation Types

PNV Type	Acres	Percent of WSA
Juniper-pinyon	12,500	24
Saltbrush-greasewood	40,000	76
Total	52,500	100

Source: USDI, USGS, 1978.

There is a public water reserve withdrawal (34 acres) in T. 11 S., R, 14 W., sec. 11 that protects the watershed through segregation of the land from public land laws and nonmetalliferous mining.

Mineral and Energy Resources

The mineral and energy resource rating summary is given in Table 4. The BLM, in consultation with the U.S. Department of Energy, had each WSA within Utah independently assessed for its energy and mineral resources by SAI (1982). Refer to Appendix 5 in Volume I for a detailed description of the SAI rating system.

Table 4
Mineral and Energy Resource Rating Summary

Resource	Rating: Favorability[a]	Rating: Certainty[b]	Estimated Resource
Oil and Gas	f2	c1	Less than 10 million barrels of oil; less than 60 billion cubic feet of gas
Uranium	f2	c1	Less than 500 metric tons of uranium oxide
Geothermal	f3	c2	Moderate temperature resource
Gold	f2	c2	Less than 100,000 troy oz.
Beryllium	f2	c2	Less than 10 metric tons
Lead/Zinc	f3	c2	50,000 to 1 million metric tons
Tungsten	f2	c1	Less than 500 metric tons

Source: SAI, 1982; USDI, BLM, 1987d.

[a]Favorability of the WSA's geologic environment for a resource (f1 = lowest favorability or smallest size deposit; f4 = highest favorability or largest size deposit).

[b]The degree of certainty that the resource does or does not exist within the WSA (c1 = lowest and c4 = highest).

The WSA could contain deposits of beryllium, lead, zinc, and tungsten that are currently listed as strategic and critical materials (USDoD, 1988).

- Leasable Minerals

There are no known occurrences of leasable minerals in the WSA, nor are there any active drilling or exploration activities for leasable minerals.

- Oil and Gas

Although oil and gas seismic surveys have taken place nearby, the geologic history of the WSA indicates that large structural traps for oil and gas are unlikely to occur. However, small traps may exist in random locations. The geologic favorability for oil and gas deposits in the WSA is considered f2 with a certainty of c1. There are less than 10 million barrels of oil and less than 60 billion cubic feet of gas.

The entire 52,500 acres of the WSA are in Category 2 (standard and special stipulations) for oil and gas leasing. Presently, there are no oil and gas leases in the WSA.

- Geothermal

Due to existing nearby geothermal springs of moderate temperature, the favorability of geothermal resources occurring in portions of the WSA is f3 with a certainty of C2. This rating is based on geologic inference and has yet to be confirmed by actual drilling.

- Locatable Minerals

- Beryllium

Although there has been no known production of beryllium within the WSA, the study area lies within the Deep Creek-Tintic east to west mineral belt and is broadly favorable for small deposits (f2). Based on available data, the certainty has been rated low, or c2.

- Lead and Zinc

The Fish Springs WSA lies completely within the Deep Creek-Tintic east-west mineral belt. Several mines on the northern end of the mountain range have produced lead and zinc in the past; however, no significant quantities have been recovered from within the WSA. Minor amounts of molybdenum, copper, magnesium, and silver might occur with this mineralization. Due to surface geology (nearby intrusive dikes), comments, and the location of the mineral belt, the geologic favorability of the WSA is rated f3, favorable for moderate sized deposits, with a low (c2) degree of certainty. More thorough exploration would be required to determine the true mineral potential.

- Gold

Based on the geologic favorability described above (lead and zinc), the known associated indicator minerals, and mineral models of similar types of host rocks and geologic settings in Nevada and Utah, the geologic favorability for gold has been rated f2 for small deposits with a low (c2) degree of certainty (USDI, USGS, 1969, 1985, 1986a; and Wilkins, 1984).

- Tungsten

A geologic favorability for small tungsten deposits (f2) exists with a very low degree of certainty (c1).

- Uranium

Based on the geologic discussions above, there is a very low certainty level (c1) for a geologic favorability for small uranium deposits (f2).

- Other Minerals

Minor amounts of fluorite, barite, and cerussite are also known to occur within the WSA.

There are 108 mining claims totaling approximately 2,160 acres for various locatable minerals in the WSA. All claims are on the margins of the WSA.

- Salable Minerals

Sand, gravel, and limestone deposits occur within the WSA. However, due to low demand and nearby large deposits not located in the WSA, use of the deposits in the WSA is expected to be minimal in the foreseeable future.

Wildlife Including Special Status Species

The Fish Springs WSA provides habitat for a variety of animal species. There are 54 species of mammals, 123 species of birds, 14 species of reptiles, and one amphibian species that inhabit the area at different

times of the year. Although a great diversity exists, no one species can be described as abundant.

There are two endangered (bald eagle and peregrine falcon) and one BLM sensitive species (golden eagle) that inhabit the WSA. Although there are no Federally designated critical habitats in the WSA, the entire WSA is considered crucial yearlong habitat for golden eagle. The designation "crucial" for eagle habitat indicates that the eagles nest in the higher areas of the WSA.

Six Category 2 candidate species could occur in the WSA. These are the ferruginous hawk, long-billed curlew, Swainson's hawk, western snowy plover, white-faced ibis, and the Bonneville pocket gopher. With the exception of the Bonneville pocket gopher, these species are birds that frequent areas throughout the Great Basin and other parts of the western United States (refer to Appendix 4 in Volume I for details).

There are approximately 22,400 acres of yearlong range for mule deer and approximately 817 acres of crucial deer summer range. There are approximately 20 deer in the WSA. There are approximately 33,322 acres of yearlong range for pronghorn antelope, with approximately 20 antelope in the WSA. UDWR has identified approximately 34,850 acres of potential range for the reintroduction of the desert bighorn sheep. Three guzzlers would be needed in the higher areas of the WSA to support the reintroduction. No bighorn sheep are known to occur in the WSA.

Approximately 2,700 acres in the WSA are managed under the West Desert HMP. The purpose of this HMP is to manage habitat for pronghorn antelope, chukar partridge, mule deer, and raptors. There are no existing or proposed vegetation manipulation projects within the WSA boundary.

Forest Resources

There are approximately 17,740 acres of scattered stands of pinyon pine and Utah juniper trees in the WSA. The total estimated volume is 27,000 cords of firewood and 6,000 juniper posts. However, demand is low, there is no access to the products, and the trees are in scattered locations.

Livestock and Wild Horses/Burros

Because of the rugged terrain, livestock use is restricted to the benchlands on the sides of the Fish Springs Range. Existing range improvements consist of one developed well, one developed spring and 0.75 mile of allotment boundary fence. No areas within the WSA have been identified for vegetation manipulation to benefit livestock. Permittees use the 10 miles of existing ways in the WSA for managing livestock. Livestock are delivered to the area at the beginning of the grazing season and picked up at the end of the season by trucks used on the ways. This use all takes place in the benchlands of the WSA.

One of the three allotments (Thousand Peaks) is used both by cattle and sheep. The other two are cattle allotments. An estimated 2,534 AUMs are in the WSA. This represents 12 percent of the AUMs for the allotments involved. Refer to Table 5 for specific allotment information. Water is hauled along boundary roads, and sheep camps are located on the benchlands on the west side of the WSA.

Table 5
Livestock Grazing Use Data

Allotments	Total Acres	Acres in WSA	Total AUMs	Number of AUMs in WSA	Number and Kind of Livestock	Season of Use	Number of Operators
East Fish Springs	50,930	28,701	1,104	812	140 Cattle	04/15-12/15	1
Boyd Station	21,773	2,715	827	110	168 Cattle	11/01-04/30	1
Thousand Peaks	332,022	21,084	18,816	1,612	1,325 Cattle 8,686 Sheep	10/28-06/10 11/01-05/08	1
Total	404,725	52,500	20,747	2,534			3

Sources: USDI, BLM, 1987c.

APHIS conducts predator control in the BLM grazing allotments that comprise the WSA. A total of 27 predators including foxes, coyotes, and a ringtail cat were taken in the allotments in and surrounding the WSA during 1986 and 1987 (USDA, APHIS, 1988). Four coyotes were taken from aircraft. Seven coyotes and foxes were taken by cyanide guns (M-44s), eight coyotes by denning, and one ringtail cat was caught in a snare. The WSA comprises between 6 and 56 percent of any one allotment. It is not known what proportion of the predators were actually taken within the WSA. The confirmed livestock loss for 1986 and 1987 in these allotments was four sheep. An unrecorded number of additional losses were reported by livestock operators. No wild horses or burros use this WSA.

Visual Resources

Visual quality in the WSA varies considerably. The main part of the Fish Springs Range has strong visual character due to the steep rugged peaks and variety in color from differing vegetation and rocks. The lower benchlands have little variety in landform, color, or vegetation.

Portions of the WSA are visible from two secondary recreation travel routes on the north and south sides.

The BLM Visual Resource Evaluation System (refer to Appendix 7 in Volume I) rated the WSA's visual characteristics as shown in Table 6 (terms are defined in the Glossary).

Table 6
Visual Resource Quality and Management Class

Element		Acres	Percent of WSA
Scenic Quality Class A		0	0
Scenic Quality Class B		30,878	59
Scenic Quality Class C		21,622	41
	Total	51,500	100
Management Class I		0	0
Management Class II		30,878	59
Management Class III		0	0
Management Class IV		21,622	41
	Total	51,500	100

Source: USDI, BLM, 1987c

Cultural Resources

As of 1988, BLM site records indicate that there is only one recorded prehistoric and no historic sites in the WSA. However, the area has a long history of use by both prehistoric and recent inhabitants. This is particularly true around Fish Springs. There is a moderate potential for finding both surface and cave sites. There are no National Register sites or nominees in the WSA. However, any cave site would likely have National Register significance. The four Fish Springs cave sites just outside the northern boundary of the WSA were added to the National Register in February 1982, following research by the State of Utah.

Recreation

The quality of 15 recreational opportunities was evaluated for this WSA. Thirteen recreational opportunities are present in varying degrees. Geological sightseeing, dayhiking, and backpacking are the activities most likely to draw visitors to the area. The area also has rock climbing potential and scenic vistas. Limiting factors for recreational opportunities include lack of water, rugged terrain, and limited numbers of wildlife.

Hiking and backpacking opportunities are somewhat restricted by the narrow width of the range. Day trips are possible by hiking up one side and down the other via several large drainages. Longer trips are possible only by hiking the crest of the range, some 16 miles long.

ORV use is very light and is limited by terrain to the 10 miles of existing ways in the lower benchlands for access, largely for hunting antelope and mule deer.

At present, BLM recreation specialists estimate that total recreational use is under 50 visitor days use per year and is mainly for primitive type recreation.

The WSA is currently open for ORV use under the House Range RMP.

Land Use Plans

The WSA is BLM-administered public land except for six State sections (3,840 acres) and one tract (80 acres) of private land. The current policy of the State is to maximize economic returns and to reserve its position regarding exchange of in-held lands. The Utah State Legislature passed S.C.R. No. 1 in 1986, opposing any additional wilderness designation in Utah and urging that State lands not be exchanged out of wilderness areas. Of the 3,840 acres of State land, 1,280 acres (T. 13 S., R. 14 W., secs. 2 and 32) are under lease for livestock grazing.

FISH SPRINGS WSA

The current BLM planning document for the Fish Springs WSA is the House Range RMP. Wilderness is not addressed in the House Range RMP (USDI, BLM 1984 and 1987a). Wilderness designation is part of the BLM multiple-use concept. The BLM land use plans are linked to the Statewide Wilderness EIS through inclusion of the present plan as the No Action/No Wilderness Alternative. Juab County does not have a current master plan but has nearly completed a plan that does not specifically address wilderness. The county generally prefers multiple use, the concept being that open spaces be used for many purposes on public lands (Fawcett, 1985).

Nevertheless, the Juab County Commissioners have endorsed the Consolidated Local Government Response to Wilderness (Utah Counties, 1986), which opposes wilderness designation of BLM lands in Utah. BLM's land use plan is consistent with State and local government plans. As part of BLM's planning efforts for the House Range RMP, Juab County and the State of Utah were given opportunity to review and comment on the draft and final plan. Letters received by BLM did not specifically indicate that the plan was inconsistent with State and local planning (Bangerter, 1986).

The Fish Springs WSA is in the south range of the U.S. Air Force's Utah Test and Training Range. The U.S. Air Force's position is that low-level military overflights of the Utah Test and Training Range, including the Fish Springs WSA, would continue regardless of wilderness designation.

There is a HAMOTS site on high ground in the north central part of the WSA. HAMOTS facilities consist of 24-foot high antennas with associated braces, solar panels, and batteries. HAMOTS provides for radar-tracking of air-launched cruise missiles. There are several such sites in the Utah Test and Training Range (western Utah and eastern Nevada). A 10-acre rights-of-way for this facility was issued in 1979. The temporary rights-of-way was issued for up to 20 years, and can be renewed. Access to the HAMOTS site is limited to walking or by helicopter. The facility is considered to be nonimpairing under interim wilderness management, but the BLM has stipulated that it would be removed if the WSA is designated as wilderness.

Socioeconomics

- Demographics

The Fish Springs WSA is located in Juab County, Utah. Census figures for 1980 show a Juab County population at 5,530 (an increase of 20.9 percent since 1970). The 1987 population of Juab County is approximately 5,890. Nephi (3,285) is the largest community in Juab County. Table 7 shows the 1980 census figures and projects population to the year 2010.

Table 7
Baseline and Projected Population and Employment Growth
Juab County

	1980	1990	2000	2010
Population	5,530	5,900	6,200	7,250
Employment	2,265	2,300	2,600	3,100

Source: Utah Office of Planning and Budget, 1987.

Nephi, located approximately 70 miles east of the WSA, and Delta (a town of approximately 1,930 in Millard County), located approximately 50 miles southeast of the WSA; are main gateways and service centers to the Fish Springs WSA.

- Employment

Table 7 provides baseline (1980) and projected employment for Juab County to the year 2010. The government (Federal, State, and local) sectors provide the greatest amount of employment in Juab County. Mining has been declining and provides less than 10 percent of the employment in the county. Juab County is part of the Central MCD. Table 8 shows the baseline (1980) and projected employment by sources for the Central MCD.

Table 8
Central Multi-County District Employment[a]

	1980	1990	2000	2010
Agriculture	3,649	3,500	3,600	3,800
Mining	706	700	800	900
Construction	822	1,400	2,200	2,200
Manufacturing	2,047	1,900	2,200	2,600
Transportation, Utilities	589	1,300	1,400	1,500
Trade	2,604	3,400	4,000	4,900
Finance, Insurance, Real Estate	347	400	500	600
Services	1,439	2,300	2,900	3,500
Government	3,919	4,100	4,100	4,900
Nonfarm Proprietors	2,278	2,800	3,300	4,100
Totals	18,400	21,800	25,000	29,000

Source: Utah Office of Planning and Budget, 1987.

[a]Includes Juab, Millard, Piute, Sanpete, Sevier, and Wayne Counties.

In 1980 the leading employment sec-tors for the MCD were government (21 percent), trade (14 percent), and proprietorships (12 percent). Mining provided

approximately 4 percent of the direct employment in the MCD. It is projected that by the year 2010 employment in the MCD will increase by about 58 percent. Trade will increase to 17 percent and proprietorships to 14 percent of the total. While government will decline to 17 percent and mining to 3 percent of the total.

- Sales and Revenues

Economic-related activities in the WSA include mineral exploration, livestock production, woodland production, and recreation. Table 9 summarizes local sales and Federal revenues from the WSA. Appendix 9 in Volume I identifies the multipliers used to estimate sales and revenues.

Table 9
Sales and Revenues

Source	Estimated Annual Local Sales[a]	Estimated Annual Federal Revenues
Oil and Gas Leases	0	0
Geothermal Leases	0	0
Mining Claim Assessment	$ 10,800	0
Livestock Grazing	50,680	$ 3,902
Recreation	205	0
Total	$ 61,685	$ 3,902

Sources: USDI, BLM, 1982a; Appendix 9 in Volume I.

[a]Local sales represent money potentially spent. They do not account for the total income that would be generated by these expenditures.

The WSA has 108 mining claims. Regulations require a $100 annual expenditure per claim for labor and improvements, an undetermined part of which is spent in the local economy. Not all claims are current in assessment.

No oil and gas or mineral production has occurred in the WSA. Therefore, mineral and energy resource production from the WSA has not contributed to local employment or income.

Four livestock operators have a total grazing privilege of 2,534 AUMs within the WSA. If all this forage were utilized, it would account for $50,600 of livestock sales including $12,670 of ranchers' returns to labor and investment.

Some woodland products are harvested from the WSA; however, the harvests have been small and are insignificant to the local economy and only of minor significance to those involved in the harvest.

Since recreational use is estimated as under 50 visitor days per year, the WSA's nonmotorized recreational use and related local expenditures are low and well distributed. These expenditures are insignificant to both the local economy and individual businesses. The WSA's motorized recreational use and related local expenditures are low. They are insignificant to both the local economy and individual businesses. The actual amount of income generated locally from recreational use in the WSA is unknown. However, an approximate range of expenditures can be deduced (Dalton, 1982). This study indicates that the Statewide average local expenditures per recreational visitor day for all types of recreation in Utah are approximately $4.10. The estimated local recreational use expenditures for Fish Springs WSA are about $205 (50 visitor days per year x $4.10).

The WSA generates Federal revenues from livestock (refer to Table 9). Average actual livestock use and, therefore, revenues generated from grazing in the WSA are unknown; however, the permittees in the WSA can use up to an estimated 2,534 AUMs per year. Based on a $1.54 per AUM grazing fee, the WSA can potentially generate $3,902 of grazing fee revenues annually, 50 percent of which would be allocated back to the local BLM District for the construction of rangeland improvements.

ENVIRONMENTAL CONSEQUENCES OF ALTERNATIVES

No Action/No Wilderness Alternative

This section describes the environmental consequences of implementing the alternatives. The analysis is based on the BLM management actions and anticipated activities presented in the Introduction to Volume II and the Description of the Alternatives for the Fish Springs WSA.

- Impacts on Wilderness Values

Because the WSA would not be designated wilderness with this alternative, the identified wilderness values would not receive the protection afforded by application of the Wilderness Management Policy (BLM Manual 8560). Wilderness characteristics in the WSA would only be marginally protected by limitations placed on potential surface-disturbing activities (i.e., 30,878 acres would be managed under VRM Class II objectives requiring that activities not be apparent).

Disturbance of approximately 2 acres for development of wildlife guzzlers is likely in the foreseeable future and would result in reduction in the wilderness values of naturalness and opportunities for solitude and primitive recreation until activities and noise cease and reclamation is complete. The disturbance would not be substantially noticeable in the area as a whole. The disturbance is minor and would not affect geologic special features. Animal special features would benefit from the new water sources.

Sights and sounds from continued and increased vehicle use of 10 miles of ways would detract from opportunities for solitude and primitive recreation during the period of use. Considering that Fish Springs WSA is not a destination area for ORV use, and that terrain limits ORV use of the area, and that 90 percent of recreation use now and in the future will be primitive in nature, additional ORV disturbance is not anticipated. The areas where ways exist are generally not considered by BLM to have outstanding opportunities for solitude and primitive recreation.

Overflights by military aircraft would continue to be an occasional annoyance that would detract from the opportunities for solitude within the WSA.

The degree to which disturbance would occur over the long term, and therefore, the long-term loss of wilderness values that would result, is not accurately known. The degree of loss would increase as intrusions increase.

Conclusion: Wilderness values would not be protected by wilderness designation. In the foreseeable future, naturalness and opportunities for solitude and primitive recreation would be slightly reduced in quality on 2 acres. Special features would not be negatively affected.

- Impacts on Livestock Management

Domestic livestock grazing would continue as authorized in the House Range RMP, with portions of three allotments used by three permittees. There would be no changes in or effect on the current livestock use and management including predator control under this alternative. Additional roads or other facilities for livestock handling could be proposed and developed in the future without regard for wilderness values. No livestock management facilities are currently proposed, however, and few changes in livestock management techniques are expected.

Conclusion: Livestock management would not be affected.

- Impacts on Air Force Operations

A U.S. Air Force HAMOTS facility would be allowed to remain in the WSA, therefore, the No Action/No Wilderness Alternative would not affect USAF operations.

Conclusion: The No Action/No Wilderness Alternative would not affect Air Force operations.

All Wilderness Alternative (52,500 Acres)

- Impacts on Wilderness Values

Designation and management of all 52,500 acres as wilderness would preserve the wilderness values in the Fish Springs WSA. The potential for surface disturbance would be reduced through closure of the entire area to future mineral leasing and location and to ORV use, and through management of the area as VRM Class I which allows for only natural ecological change. Naturalness would be protected on all 52,500 acres. Opportunities for solitude and primitive and unconfined recreation (considered outstanding on 25,200 acres), and special features (including scenic, geological, and wildlife values) would also be protected. Even with wilderness designation, disturbance of approximately 2 acres for development of wildlife guzzlers is likely in the foreseeable future. The disturbance would not be substantially noticeable in the area as a whole. The disturbance would not affect geologic special features. Animal special features would benefit from the new water sources.

Sights and sounds from vehicular use of 10 miles of ways would cease and no longer detract from opportunities for solitude and primitive recreation. Future increase in recreation use would be primitive in nature, is expected to be minimal, and would not be expected to impact wilderness values.

Overflights by military aircraft would continue to be an occasional annoyance that would detract from the opportunity for solitude in the WSA.

Conclusion: Wilderness designation would preserve wilderness values throughout the WSA. In the foreseeable future, naturalness and opportunities for solitude and primitive recreation would be slightly reduced in quality on 2 acres.

• Impacts on Livestock Management

No changes in livestock grazing allocations (currently 2,534 AUMs) are expected from this alternative. The existing developed well and spring could continue to be used and maintained in the same manner as in the past based on practical necessity and reasonableness. Restrictions that would be applied to use of existing ways would affect the use of the 10 miles of ways in the WSA and the way livestock are managed. Restrictions on vehicle use would impact hauling of salt and routine access to sheep camps and for management of livestock. The result would be an inconvenience for the three affected permittees. Predator control activities would be restricted to approved methods and slight increases in predation on livestock on public and State lands within and adjacent to the WSA would result. Predation on sheep in the Thousand Peaks allotment is the most likely problem. Increased sheep losses would be slight because predator control records indicate that predation is low (four sheep during the 1986 to 1987 period (USDA, APHIS, 1988), and several methods of predator control could still be utilized.

Conclusion: Wilderness designation would result in restrictions on access and inconvenience to three livestock permittees. Costs of management and predation on livestock would increase slightly.

• Impacts on Air Force Operations

A USAF HAMOTS station would be removed from the WSA. It would be necessary for the Air Force to place the facility at an alternate site and to redesign the tracking grid.

Conclusion: Removal of an aircraft tracking station would require adjustments in Air Force operations.

Partial Wilderness Alternative (Proposed Action) (33,840 Acres)

• Impacts on Wilderness Values

Wilderness designation would preserve wilderness values on 33,840 acres. Naturalness (all 33,840 acres meet the standard), opportunities for solitude and primitive recreation (25,200 acres are considered outstanding) and the geologic, scenic, and animal special features in this area would be preserved through management under VRM Class I and closure of the area to mineral leasing and location and ORV use. Overflights by military aircraft would continue to be an occasional annoyance that would detract from the opportunity for solitude in the WSA.

Disturbance of approximately 2 acres in the designated area for development of wildlife guzzlers is likely in the foreseeable future but would not result in reduction in the wilderness values. The disturbance would not be substantially noticeable in the area as a whole. The disturbance would not affect geologic special features. Animal special features would benefit from the new water sources. Closure of the 2 miles of ways in the designated area would add to opportunities for solitude and primitive recreation.

No disturbance that would affect wilderness values is anticipated in the nondesignated area. Sights and sounds from continued and increased vehicle use of 8 miles of ways in the nondesignated area would detract from opportunities for solitude and primitive recreation during the period of use. Considering that Fish Springs WSA is not a destination area for ORV use, that terrain limits ORV use of the area, and that 90 percent of recreation use now and in the future (in the nondesignated area) will be primitive in nature, additional ORV disturbance is not anticipated. The areas where ways exist in the nondesignated area are not considered by BLM to have outstanding opportunities for solitude and primitive recreation.

Military overflights would continue to be an occasional annoyance that would detract from the opportunity for solitude in the WSA.

The degree to which disturbance would occur over the long term and, therefore, the long-term loss of wilderness values that would occur is not accurately known. Loss would occur as intrusions increase.

Conclusion: Wilderness values would be preserved in the designated area which is about 64 percent of the WSA. In the foreseeable future, naturalness and opportunities for solitude and primitive recreation would be slightly reduced in quailty in the designated area on 2 acres.

• Impacts on Livestock Management

The Partial Wilderness Alternative would not affect livestock grazing levels and would have little effect on livestock management practices. The 2,534 AUMs in the WSA would be in the nondesignated area. Additionally, only 2 of the 10 miles of ways used by livestock operators would be closed to vehicular use. Predator control would continue under State law and

APHIS regulations in the benchlands of the WSA without wilderness considerations, and sheep losses would not increase.

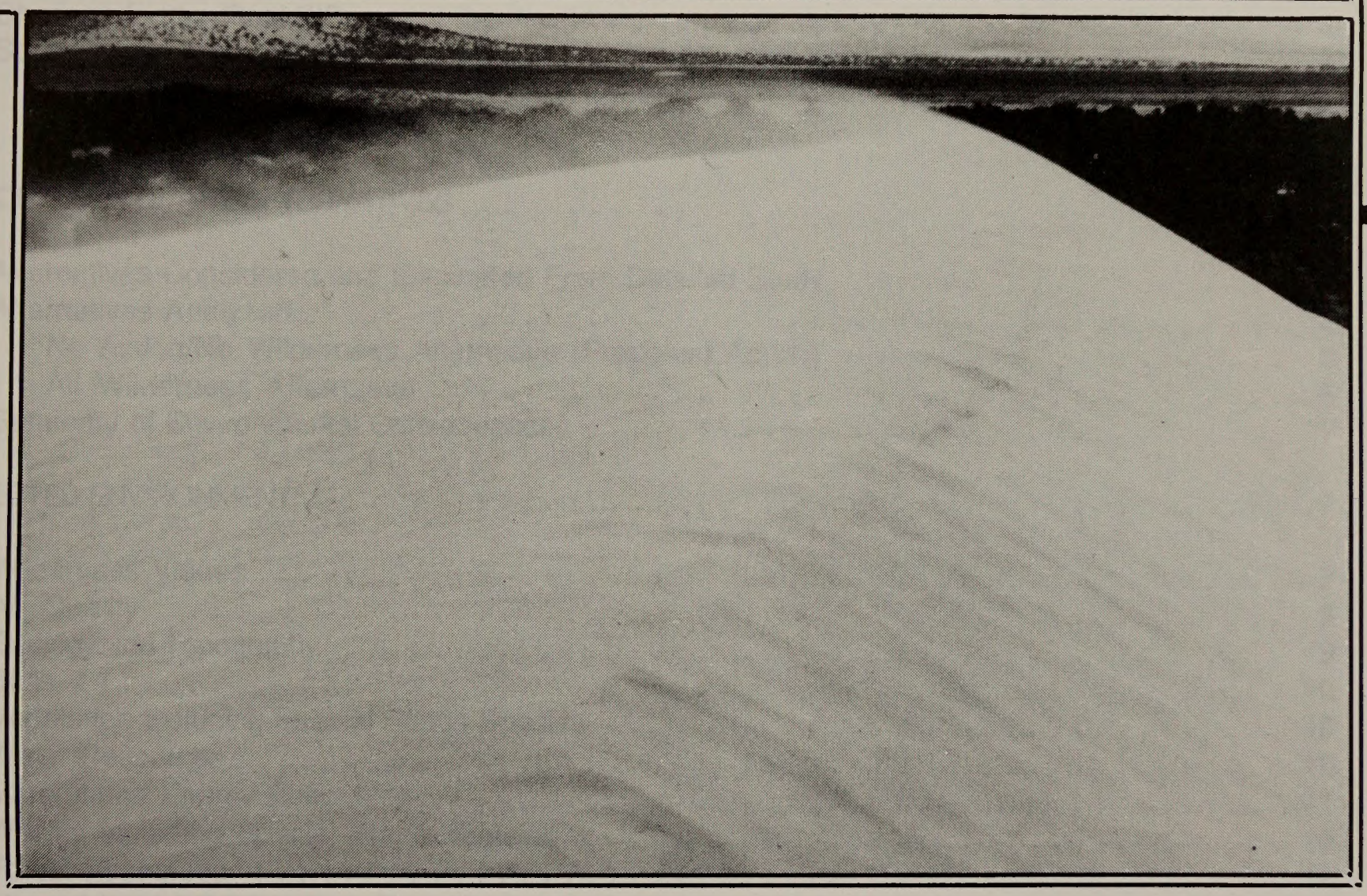
Conclusion: Partial wilderness designation would not affect livestock management.

- Impacts on Air Force Operations

The impact of partial wilderness designation on Air Force operations would be the same as for the All Wilderness Alternative.

Conclusion: Removal of an aircraft tracking station would require adjustments in Air Force operations.

Rockwell WSA



ROCKWELL WSA

TABLE OF CONTENTS

INTRODUCTION 1

General Description of the Area 1
Changes for the Final EIS 1
Specific Issues Identified Through Scoping and Public Comment 1
Issues Considered But Not Analyzed in Detail 1
Issues Analyzed in Detail 3

DESCRIPTION OF THE ALTERNATIVES 3

Alternatives Considered and Eliminated From Detailed Study 3
Alternatives Analyzed 3
No Action/No Wilderness Alternative (Proposed Action) 3
All Wilderness Alternative 5
Summary of Environmental Consequences 7

AFFECTED ENVIRONMENT 7

Wilderness Values 7
Air Quality 9
Geology and Topography 9
Soils 10
Vegetation Including Special Status Species 10
Water Resources 10
Mineral and Energy Resources 11
Wildlife Including Special Status Species 12
Forest Resources 12
Livestock and Wild Horses/Burros 13
Visual Resources 13
Cultural Resources 13
Recreation 13
Land Use Plans 14
Socioeconomics 14

ENVIRONMENTAL CONSEQUENCES OF ALTERNATIVES 15

No Action/No Wilderness Alternative (Proposed Action) 15
All Wilderness Alternative 16

ROCKWELL WSA

TABLE OF CONTENTS

INTRODUCTION 1

General Description of the Area 1
Changes for the Final EIS 1
Specific Issues Identified Through Scoping and Public Comment 1
Issues Considered But Not Analyzed in Detail 1
Issues Analyzed in Detail 3

DESCRIPTION OF THE ALTERNATIVES 3

Alternatives Considered and Eliminated From Detailed Study 3
Alternatives Analyzed 3
No Action/No Wilderness Alternative (Proposed Action) 3
All Wilderness Alternative 5
Summary of Environmental Consequences 7

AFFECTED ENVIRONMENT 7

Wilderness Values 7
Air Quality 8
Geology and Topography 9
Soils 10
Vegetation Including Special Status Species 10
Water Resources 10
Mineral and Energy Resources 11
Wildlife Including Special Status Species 12
Forest Resources 12
Livestock and Wild Horses/Burros 13
Visual Resources 13
Cultural Resources 13
Recreation 13
Land Use Plans 14
Socioeconomics 14

ENVIRONMENTAL CONSEQUENCES OF ALTERNATIVES 15

No Action/No Wilderness Alternative (Proposed Action) 15
All Wilderness Alternative 16

ROCKWELL WSA

(UT-050-186)

INTRODUCTION

General Description of the Area

The Rockwell WSA contains 9,150 acres of public land in the center of Juab County, about 28 miles west of the community of Nephi. The WSA is characterized by free-moving open sand dunes, pinyon-juniper woodland covered sand ridges, and sagebrush flats. The WSA is an alluvial- and sand dune-covered graben valley surrounded by the Tintic and Sheeprock Mountains to the east and north, Desert Mountain to the west, and Black Mountain and Sand Mountain to the east and south. Old juniper trees and the ever-changing shadow effects on the dunes provide a variety of interesting visual settings. Principal uses of the area include wildlife habitat and recreation.

Great Basin climate is characterized by limited precipitation, low relative humidity, high frequency of clear skies, and large daily and annual ranges in temperature. Elevations are typically about 5,000 feet. Precipitation averages 8 to 10 inches per year. Rainfall peaks in the late summer to early fall thunderstorm season. Seasonal extremes range from a low winter recording of -25 degrees Fahrenheit (F) to a summer high of 106 degrees F.

Changes for the Final EIS

In addition to the changes noted in the Introduction to Volume II, the following changes specific to the WSA have been made since publication of the Draft EIS.

1. The descriptions of the No Action/No Wilderness Alternatives have been revised to coincide with the House Range RMP which has replaced the West Desert MFP since publication of the Draft EIS. The main feature of House Range RMP relative to the Rockwell WSA is designation of the area as the Rockwell Outstanding Natural Area/Area of Critical Environment Concern (ONA/ACEC).

2. The anticipated surface disturbance presented in the Draft EIS (212 acres) was based on the assumption that all mineral and other resources potentially within the WSA would be developed sometime in the future without consideration of technical or economic feasibility. In response to public comments relative to the feasibility of developments, the disturbance estimates have been revised to focus on activities projected to be feasible within the foreseeable future (see Appendix 6 in Volume I). This resulted in a reduction of surface disturbance estimates from the 212 acres reported in the Draft EIS to no surface disturbance for the Final EIS.

The State of Utah's position on exchange of in-held State lands has changed from requiring exchange of inholdings to exchanging lands only when it is in the best interests of the citizens of Utah. This necessitates the assumption that access to in-held State section would be required following wilderness designation.

Specific Issues Identified Through Scoping and Public Comment

- Issues Considered But Not Analyzed in Detail

In addition to the issues discussed and eliminated from further consideration in the Introduction to Volume II (i.e., impacts on air quality, geology and topography, soils, and land use plans and policies), the following issues or impacts specific to the Rockwell WSA were considered but are not analyzed in detail in the Final EIS for the reasons described below.

1. Vegetation Including Special Status Species: Estimated surface disturbance without wilderness designation has been revised downward from the 212 acres reported in the Draft EIS to no mineral-related surface disturbance in the Final EIS. Given this new scenario, no direct disturbance of the vegetation resource would occur with any of the alternatives. No threatened, endangered, or proposed threatened or endangered plant species are known to occur within the WSA. One Category 2 candidate Species, Atriplex canescens var. gigantea, is within the WSA. The various closures outlined by the House Range RMP would ensure that this species would be protected with or without wilderness designation. In any event, BLM would conduct site-specific clearances of potentially

STATEWIDE
POCKET MAP
WSA
NO. 5
SEE VOL.I

disturbed areas and consult with FWS concerning impacts on threatened or endangered plant species. Therefore, impacts on vegetation are not analyzed in detail for the Rockwell WSA.

2. Noxious Weed Control: Certain commentors were concerned that wilderness designation would prevent adequate noxious weed control. Squarose knapweed is invading the area surrounding the WSA. Selective spraying by helicopter or truck may be required within the WSA to control invasion of this noxious weed. According to the BLM Wilderness Management Policy (BLM Manual 8560) noxious weeds can be controlled inside designated wilderness in instances that threaten human life, property, or high-value resources on adjacent nonwilderness lands, or where unacceptable change to the wilderness resource would result if the measures were not taken. Noxious weeds would be controlled with any of the alternatives; therefore, noxious weed control is not an issue for the Rockwell WSA.

3. Water Resources: There are no perennial streams or developed groundwater in the Rockwell WSA. Therefore, impacts on water uses and quality are not significant issues for the Rockwell WSA and are not discussed in detail in the Final EIS.

4. Mineral Resources: The public has expressed concern that wilderness designation would interfere with or prevent mineral exploration, development, and production. There are no oil and gas leases within the WSA. Potential oil and gas deposits are small with a very low certainty that they exist. The area is closed to leasing by the BLM House Range RMP. Even though there are 24 mining claims presently in the WSA, The BLM House Range RMP proposes withdrawal from mining claim location.

The projected uranium and other locatable mineral deposits could not be economically developed in the foreseeable future (see Appendix 6 in Volume I). More accessible deposits of salable minerals exist outside the WSA. For these reasons, mineral exploration or development would not occur in the foreseeable future with or without wilderness designation. Therefore, impacts on mineral and energy exploration and production are not analyzed in detail in the Final EIS.

5. Wildlife Including Special Status Species: The public is concerned that without wilderness designation mineral or other developments would destroy wildlife habitat and lead to reductions in wildlife populations. They are also concerned that use of ORVs would disturb wildlife and destroy habitat. The Rockwell WSA provides habitat for a variety of animal species. Populations are low and no one species can be described as abundant. One endangered and six other special status species may be found in the WSA.

Because no mineral developments are expected in the WSA in the foreseeable future and the area is closed to leasing and ORVs, wildlife habitats would not be lost. Given these conditions, impacts on wildlife habitat and populations are not significant issues for the Final EIS.

6. Forest Resources: The only forest resources in the WSA are 4,758 acres of juniper woodland. The area is closed to woodland harvest and forest resources of similar quality are found in abundance in close proximity to the WSA. For these reasons, impacts on forest resources are not significant issues for analysis in the Final EIS.

7. Livestock: The public is concerned that wilderness designation would interfere with livestock management by placing restrictions on access for maintenance of existing range improvements and moving of livestock, and by preventing future range improvements. Restrictions would be placed on predator control, and livestock losses could increase in both the wilderness area and on adjacent lands. However, the Rockwell WSA comprises a portion of only one grazing allotment utilized by one rancher. The area is closed to motorized vehicles by the House Range RMP. Drifting sand and lack of water minimize use of the area and there are no present or proposed range developments. Predators have not been controlled in the area for several years. Therefore, impacts on livestock management are not significant issues for the Rockwell WSA.

8. Visual Resources: No surface disturbance is projected for the WSA in the Final EIS. Therefore, visual resources would not be significantly affected. Visual resources are not addressed as a significant issue in the Final EIS.

9. Cultural Resources: Cultural resources could be destroyed by surface-disturbing projects, use of vehicles, or vandalism. However, no cultural resource sites have been recorded in the Rockwell WSA; no mineral-related surface disturbance is projected, and the area is closed to vehicle use. Additionally, inventories for the purpose of site recordation and mitigation of impacts would take place prior to any surface disturbance in the future. Given these conditions,

impacts on cultural resources are not significant issues for the Rockwell WSA.

10. Recreation: The public has expressed concern that wilderness designation would change recreational use from motorized to primitive or, conversely that without wilderness designation motorized recreation will eliminate or reduce opportunities for primitive recreation. Recreational use of the Rockwell WSA would remain primitive with or without wilderness designation due to the natural area designation and motorized vehicle closure imposed by the House Range RMP. Therefore, impacts on recreation use would not be significant and they are not analyzed in detail in the Final EIS.

11. Economic Conditions: The public, including State and local government, is concerned that wilderness designation would preclude mineral or other economic developments and adversely affect local economic conditions. Others believe that primitive recreation use would increase following wilderness designation and would contribute to the local economy. There are no existing or anticipated mineral developments or proposals for lands or realty activities which would be impaired with or without wilderness designation. Because no economic developments are expected, and because recreational use would remain primitive with or without wilderness designation, impacts on economic conditions for the Rockwell WSA are not significant issues for the Final EIS.

- Issues Analyzed in Detail

The only significant issue for the Rockwell WSA is impacts on the wilderness values of naturalness, opportunities for solitude and primitive recreation and special features.

Comments made during the public comment period for the Draft EIS addressed a variety of topics including questions on BLM's assessment of outside sights and sounds and mineral values, opinions on the wilderness values, and diversity of the area. See Volume VII-B for responses to general comments applicable to all WSAs and/or the Statewide analysis and Volume VII-C, Section 5, for responses to specific comments about the Rockwell WSA.

DESCRIPTION OF THE ALTERNATIVES

Alternatives Considered and Eliminated From Detailed Study

During the public comment period an 11,000-acre alternative was suggested. This alternative would add 1,850 acres to the WSA in small pieces on the north, east and south boundaries. The additional areas are outside of the WSA. Some include roads and State lands or portions of the Little Sahara Recreation Area. These lands were considered and found ineligible for wilderness study during the intensive wilderness inventory and are not included as an alternative for detailed analysis.

Alternatives Analyzed

Two alternatives are analyzed for this WSA: (1) No Action/No Wilderness (Proposed Action); and (2) All Wilderness (9,150 acres). A description of the BLM's management practices with each alternative follows. Where management intentions have not been clearly identified, assumptions are made based on management projections for each alternative. These assumptions are indicated in each case. The BLM management actions presented in the Introduction to Volume II are also applicable.

- No Action/No Wilderness Alternative (Proposed Action)

With this alternative, none of the 9,150-acre Rockwell WSA would be designated by Congress as part of the NWPS. Although BLM's land use plans are regularly updated, it is projected that the area would continue to be managed in accordance with the Little Sahara Recreation Area Management Plan, (USDI, BLM, 1979b) and with the House Range Resource Area RMP (USDI, BLM, 1987c). It is projected that the WSA would continue to be managed as an ONA/ACEC as provided for in the House Range RMP. Major features of the ONA/ACEC are closure to ORVs; closure to harvest of woodland products; no leasing or sales of minerals; and a proposal to withdraw the area from mining claim location. The withdrawal would be completed as part of the No Action/No Wilderness Alternative. State lands adjacent to the WSA (refer to Map 1) would remain in State ownership, unless future arrangements result in an exchange to Federal ownership as part of the overall management of the BLM Little Sahara Recreation Area. It is projected that adjacent State lands would remain in State ownership.

ROCKWELL WSA

R. 6 W. R. 5 W. R. 4 W.

T. 12 S.

T. 13 S.

T. 14 S.

Rockwell Ranch

LITTLE SAHARA RECREATION AREA

SAND DUNES

Flowing Well 2

Black Mountains

Tanner Creek Narrows

Champlin

Sand Hills

Sand Mountain

Well

The Knoll

1650 1653 1616 1516 1522 1600 1577 1776 1474 1508 1514 1550 1500 1449 1459 1503

36 31 1 6

Map 1
LAND STATUS
Rockwell WSA
UT-050-186

Legend

- WSA Boundary
- Boundary of BLM Recreation Area
- State Land Within or Adjacent to WSA
- BLM Administered Land Within or Adjacent to WSA

SCALE IN MILES
0 1 2

SCALE IN KILOMETERS
0 1 2 3

N

ELEVATION EXPRESSED IN METERS

- Management Conditions and Constraints

All 9,150 acres would be withdrawn from mineral location and closed to leasing and sale. Development work, extraction, and patenting would be allowed on existing mining claims (480 acres). Development would be regulated by unnecessary or undue degradation guidelines (43 CFR 3809) without concern for wilderness values. There are no oil and gas leases in the WSA and new leases would not be issued. Exploration or development of existing claims are not expected because the level of known resources and the probability of development are too low to support a development assumption (refer to Appendix 6 in Volume I).

The present 212 AUMs allocated for domestic livestock grazing use in the WSA would continue as authorized in the BLM planning documents. No rangeland developments are proposed.

Development, use, and maintenance of facilities and improvements for wildlife, water resources, etc., would be allowed if in conformance with the BLM planning documents; however, none are currently planned or projected.

The entire WSA acreage would continue to be closed to ORV use; the area is presently closed to vehicle use as part of the Rockwell ONA/ACEC. Approximately 1 mile of an existing vehicular way in the WSA would not be available for motorized use except for users with valid existing rights if approved by BLM in accordance with 43 CFR 2920 provisions.

The entire area would continue to be closed to woodland product harvest.

The area would continue to be managed as VRM Class II on 3,506 acres, Class III on 4,972 acres, and Class IV on 672 acres.

The WSA would continue to be closed to hunting as discussed in the Little Sahara Recreation Area Management Plan because of its location within the recreation area.

- Action Scenario

It is projected that implementation of the No Action/No Wilderness Alternative would not result in any surface-disturbing activities. No locatable or leasable mineral resource exploration or development is anticipated. No rangeland, wildlife habitat, or watershed improvement projects are planned.

No disturbance from ORV activity is anticipated due to management constraints.

Recreation use is projected to increase over the current estimate use of 3,960 annual visitor days at a rate of 2 to 7 percent per year. The use would all be primitive in nature.

- All Wilderness Alternative

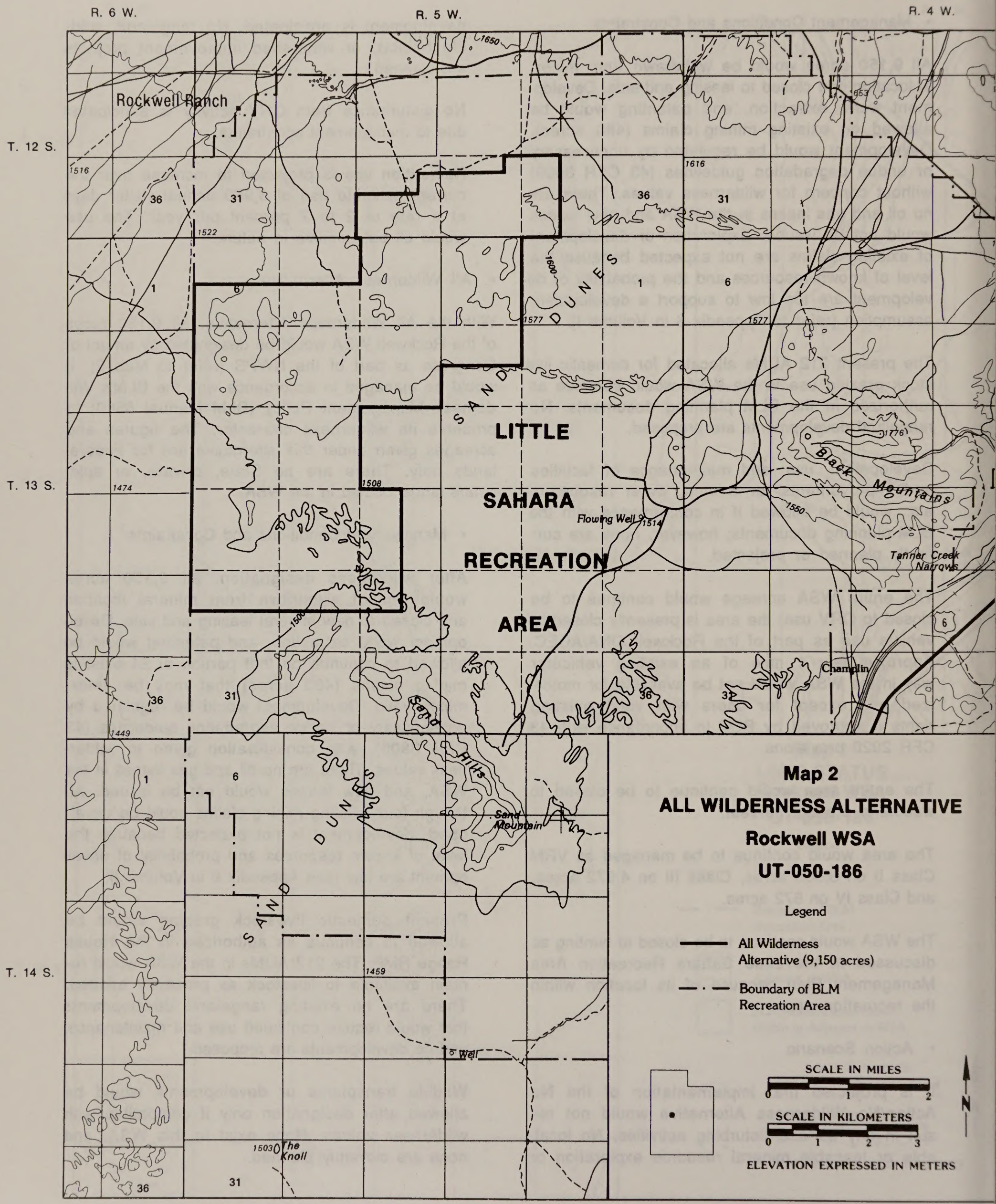
With the All Wilderness Alternative, all 9,150 acres of the Rockwell WSA would be designated by an act of Congress as part of the NWPS (refer to Map 2). It would be managed in accordance with the BLM's Wilderness Management Policy (BLM Manual 8560) to preserve its wilderness character. The figures and acreages given under this alternative are for Federal lands only. There are no State, private, or split-estate lands located in the WSA.

- Management Conditions and Constraints

After wilderness designation, all 9,150 acres would remain withdrawn from mineral location and closed to new mineral leasing and sale. Development work, extraction, and patenting would be allowed to continue on that portion of 24 existing mining claims (480 acres) that may be determined valid. Development would be regulated by unnecessary or undue degradation guidelines (43 CFR 3809), with consideration given to wilderness values. There are no oil and gas leases in the WSA, and new leases would not be issued. Although four existing mining claims could be developed, development is not expected because the level of known resources and probability of development are low (see Appendix 6 in Volume I).

Present domestic livestock grazing would be allowed to continue as authorized in the House Range RMP. The 212 AUMs in the WSA would remain available to livestock as presently allotted. There are no existing rangeland developments that would require continued use and maintenance, and no developments are proposed.

Wildlife transplants or developments would be allowed after designation only if compatible with wilderness values. None exist in this WSA, and none are currently planned.



Map 2
ALL WILDERNESS ALTERNATIVE
Rockwell WSA
UT-050-186

Legend

- All Wilderness Alternative (9,150 acres)
- Boundary of BLM Recreation Area

SCALE IN MILES
0 1 2

SCALE IN KILOMETERS
0 1 2 3

N

ELEVATION EXPRESSED IN METERS

ROCKWELL WSA

The entire 9,150-acre area would continue to be closed to ORV use except for users with valid existing rights if approved by BLM in accordance with wilderness management guidelines. The area is currently closed to vehicular use as part of the Rockwell ONA/ACEC. About 1 mile of existing vehicular way in the WSA would not be available for vehicular use except as indicated above. No existing roads border the WSA. However, four jeep trails dead-end near the WSA boundary, and these trails (outside the WSA) would be allowed to remain open to vehicular use.

Visual resources would be managed in accordance with VRM Class I standards which generally allow for only natural ecological change.

Hunting would not be allowed due to the proximity of the Little Sahara Recreation Area.

- Action Scenario

No surface disturbance is projected. No exploration or development of existing mining claims is projected. Implementation of the All Wilderness Alternative would preclude new mining claims and mineral leasing and sales. Therefore, no mineral exploration or development would occur. No rangeland, wildlife habitat, or watershed improvement projects are planned.

No ORV disturbance is projected due to wilderness management constraints.

Recreation use is projected to increase over the current estimated use of 3,960 annual visitor use days at a rate of 2 to 7 percent per year. All use would be primitive in nature.

Summary of Environmental Consequences

Table 1 summarizes the environmental consequences of the alternatives.

AFFECTED ENVIRONMENT

This section describes the overall environmental setting. This information allows for independent assessment by the public, as required by CEQ guidelines, and provides a data base for the cumulative Statewide analysis found in Volume I, Statewide Overview.

Unless otherwise indicated, information for this section was taken from BLM staff specialists, technical reports, and file documents, including land use plans.

Wilderness Values

- Size

This WSA is 9,150 acres. It is approximately 5 miles long and 4 miles wide at its widest point.

- Naturalness

The only intrusion within the WSA is a vehicular way of approximately 1 mile which penetrates from the north. It is substantially unnoticeable. In August 1986, a wildfire burned approximately 2,500 acres in the southwestern portion of the WSA. This area was not rehabilitated, but the burned area appears natural. Therefore, essentially all of the 9,150 acres are considered natural.

- Solitude

Opportunities to find solitude within the WSA are influenced by size, topography, vegetation, and outside sights and sounds. The WSA is relatively small (2 to 4 miles wide by 5 miles long). Topography ranges from flat terrain on the west to rolling sand hills in the central portion and low-rolling sand dunes on the east. Vegetation consists of low-desert shrub on the flats, scattered juniper trees and sagebrush on the rolling hills, and little vegetation on the sand dunes. Several motorcycle races are held throughout the year adjacent to the area with race courses bordering all sides of the WSA. Considerable ORV use occurs at Sand Mountain and near Jericho and White Sands campgrounds, which are located 1 to 2 miles to the south and east. The lack of topographic and vegetation screening, in conjunction with the adjacent motorized recreation activities, make the WSA's opportunities for solitude less than outstanding on approximately 4,106 acres (45 percent). Although the WSA was administratively closed to ORV use in 1974, BLM has experienced difficulty in eliminating ORV use due to the intensity of use in the surrounding portions of the Little Sahara Recreation Area. It is difficult to define, post, and patrol the eastern and southern boundaries of the unit. The juniper-covered, rolling sand hills in the central portion of the WSA do provide sufficient topographic and vegetation screening and are far enough removed from the motorized vehicular activity to provide outstanding opportunities for solitude

ROCKWELL WSA

Table 1
Summary of Environmental Consequences

Resource	Alternatives No Action/No Wilderness (Proposed Action)	 All Wilderness (9,150 Acres)
Impacts on Wilderness Values	Because BLM would manage the area as an ONA/ACEC, wilderness values of naturalness, opportunities for solitude and primitive recreation, and special features would remain as at the present. Outside sights and sounds from ORV activity would continue to detract from opportunities for solitude and primitive recreation in about 45 percent (4,106 acres) of the WSA.	Wilderness values of naturalnesss, opportunities for solitude and primitive recreation, and special features would be preserved. In spite of wilderness designation, outside sights and sounds from ORV activity would continue to detract from opportunities for solitude and primitive recreation in about 45 percent (4,106 acres) of the WSA.

which meet the wilderness characteristics criteria on approximately 5,044 acres (55 percent).

- Primitive and Unconfined Recreation

Opportunities for primitive, unconfined recreation were evaluated by considering the number of recreational opportunities present and the quality of these opportunities.

This WSA was determined to have opportunities for 12 activities related to primitive, unconfined recreation. Nature study and photography were determined outstanding in quality. All other activities were determined less than outstanding. The overall quality of the opportunities for primitive, unconfined recreation within the WSA meets the standards set by the Wilderness Act; approximately 54 percent (4,945 acres) of the WSA offers outstanding opportunities for recreation, while approximately 46 percent (4,205 acres) of the WSA does not. The outside sights and sounds of ORV activity reduce the quality of the primitive recreation opportunities.

- Special Features

The special features identified as supplemental values in the BLM Intensive Wilderness Inventory (USDI, BLM, 1980a) were old gnarled junipers, drifting sand dunes, and a unique plant type (a diploid form of Atriplex canescens var. gigantea).

The Atriplex canescens var. gigantea, or diploid fourwing saltbush, found in the WSA seems to be the last remaining relic of a variety that was once widespread. The species is of high interest to the scientific community and BLM. Its only known concentration at the present time is on the free-moving sand dunes of the Little Sahara Recreation Area. There are approximately 2,654 acres of free-moving dunes within the WSA with pockets of Atriplex canescens, var. gigantia throughout the dunes. Protection of this species is a major reason for existing management of the WSA as a Natural Area.

Old gnarled junipers are interspersed throughout the 5,200 acres of juniper woodlands within the WSA.

There is one animal species (bald eagle) in the WSA that is listed endangered. In addition to this and the plant species Atriplex canescens var. gigantea, there are six other special status animal species (refer to the Wildlife Including Special Status Species section). The WSA has other resource values that could be considered special features. Much of the WSA (38 percent [3,477 acres]) is classified as Class A scenery due to the scarcity, uniqueness, interesting form and color of the sand dunes.

- Diversity

This WSA is in the Intermountain Sagebrush Province Ecoregion and has the PNV types of saltbush-greasewood and Great Basin sagebrush (refer to the Vegetation Including Special Status Species section for more discussion on ecoregions and PNV types). The ecoregion and PNV types represented by this WSA are compared with existing and other potential National Wilderness Preservation units in the Wilderness Values section of Volume I.

This WSA is within a 5-hour drive from three standard metropolitan statistical areas. These are Salt Lake City-Ogden, Utah; Provo-Orem, Utah; and Las Vegas, Nevada.

Air Quality

The Rockwell WSA is in a PSD Class II area under the provisions of the Clean Air Act as amended. The nearest Class I area is at Capitol Reef National Park, 90 miles to the east.

Air quality in the WSA is at present generally very good to excellent. Unimpaired visibility at present is an important value of the WSA. Panoramas of Great Basin blockfaulted mountains, rising steeply from sagebrush covered plains, are greatly enhanced by the generally excellent clarity of the air. The WSA is near the center of the area with the highest visual range (70+ miles) in the United States (EPA, 1979).

Operation of the Intermountain Power Project (IPP), 15 miles to the south of the Rockwell WSA, occasionally reduces visual range. During certain meteorological conditions, visibility at the WSA is impaired because of atmospheric discoloration from plant stack discharge.

Geology and Topography

The WSA is essentially an alluvial and dune-covered graben valley of the Basin and Range Physiographic Province. It is bounded by the Tintic Mountains to the east, the Sheeprock Mountains to the north, and the Thomas Range and Drum Mountains to the west. Since the WSA lies in a valley, the topography is subdued. The highest point is an unnamed sand peak at 5,471

feet. The average elevation is around 5,000 feet. Nearly half the WSA is covered with low, rolling sand dunes. The dunes are one of the major attractions of the Little Sahara Recreation Area, of which the WSA is a portion. In general, large sand dunes are somewhat unusual in this region; however, the sand dunes in the WSA are somewhat less spectacular than those found immediately adjacent to the WSA. Bedrock exposures are minor and consist of Cambrian, Pennsylvanian, and Permian sedimentary rocks (SAI, 1982).

Soils

The soils in this WSA are of two general soil associations. They are dry, light-colored, deep, calcareous, and mildly to strongly alkaline. The alluvial soils have loam or fine sandy loam textures. Most of the WSA consists of duneland formed from eolian sands and alluvium derived from sandstone and igneous rock. Wind erosion formed the duneland portion of this WSA.

Approximately 2,379 acres (26 percent) of the WSA is in slight erosion condition class with approximately 6,771 acres (74 percent) in a moderate class. Table 2 summarizes soil erosion conditions for the entire WSA. Erosion condition classes were determined using soil surface factors (terms are defined in the Glossary). Reclamation potential and needs can be determined only on a site-specific basis. Reclamation of dunelands consisting of eolian sands is a challenge since most of the erosion is a result of wind action. These soils can be reclaimed by covering or mulching to protect the surface from wind damage.

Table 2
Erosion Condition

Classification	Annual Soil Loss (cubic yards/acre)	Acres	Percent of WSA	Total Annual Soil Loss (cubic yards)
Severe	5.4	0	0	0
Critical	2.7	0	0	0
Moderate	1.3	6,771	74	8,802
Slight	0.6	2,379	26	1,427
Stable	0.3	0	0	0
Total		9,150	100	10,229

Sources: USDI, BLM, 1978c and 1979c; Leifeste, 1978.

Vegetation Including Special Status Species

The Rockwell WSA is primarily sand with both stabilized and active dunes that provide habitat for psammophytes (sand-loving plants). One of the species present is the unusual giant diploid form of four-wing saltbush, Atriplex canescens, var. gigantea, that reaches more than 12 feet in height. Apparently, this plant was once widespread but, because of grazing pressure, it has retreated to the sand dune area (Stutz, 1974). This plant is of high interest to BLM and the scientific community. It is a Category 2 candidate species (50 CFR 17). Existing vegetation is summarized in Table 3.

Table 3
Existing Vegetation Types

Existing Vegetation Type	Acres	Percent of WSA
Juniper	4,758	52
Saltbrush-greasewood	2,196	24
Sagebrush	2,196	24
Total	9,150	100

Source: USDI, BLM, 1987c.

There are no threatened, endangered, or other special status species known to occur within the Rockwell WSA other than Atriplex canescens var. gigantea (see Appendix 4 in Volume I). Squarrose knapweed (Centaura virgata) is invading much of the area surrounding the WSA and is suspected to be within the WSA. The only known method of control is herbicide application. It is possible that a biological control agent may be found in the future. Selective spraying by helicopter or truck may be required within the WSA to control invasion by this noxious weed.

The Rockwell WSA is in the Intermountain Sagebrush Province Ecoregion as shown on the Bailey-Kuchler ecosystems map (USDI, USGS, 1978). The PNV types for the WSA are listed on Table 4.

Table 4
Potential Natural Vegetation Types

PNV Type	Acres	Percent of WSA
Great Basin sagebrush	6,405	70
Saltbrush-greasewood	2,745	30
Total	9,150	100

Source: USDI, USGS, 1978.

Water Resources

There is no surface or developed groundwater available within this WSA. Cherry Creek, a perennial stream, is 2 to 3 miles north of the WSA. Quantity and quality of groundwater in the WSA are unknown.

Mineral and Energy Resources

The energy and mineral resource rating summary is given in Table 5. Refer to Appendix 5 in Volume I for a detailed description of the SAI rating system.

Table 5
Mineral and Energy Resource Rating Summary

Resource	Rating: Favorability[a]	Rating: Certainty[b]	Estimated Resource
Oil and Gas	f 2	c1	Less than 10 million barrels of oil; less than 60 billion cubic feet of gas
Uranium	f 2	c1	Less than 500 metric tons of uranium oxide
Geothermal	f 2	c2	Low temperature resource
Beryllium	f 2	c1	Less than 10 metric tons
Lead/Zinc	f 2	c1	Less than 1 million metric tons
Tungsten	f 2	c1	Less than 500 metric tone

Source: SAI, 1982; USDI, BLM, 1987d.

[a]Favorability of the WSA's geologic environment for a resource (f1 = lowest favorability or smallest size deposit; f4 = highest favorability or largest size deposit).

[b]The degree of certainty that the resource does or does not exist within the WSA (c1 = lowest and c4 = highest).

The WSA could contain deposits of beryllium, lead, tungsten, and zinc that are currently listed as strategic and critical materials (USDoD, 1988).

- Leasable Minerals

There are no known occurrences of leasable minerals in the Rockwell WSA.

- Oil and Gas

There are no oil and gas leases in the WSA. No known exploration has occurred inside the WSA, although seismic work has taken place nearby.

Under the ONA/ACEC designation in the House Range RMP all 9,150 acres of the WSA are managed as Category 4 (closed to leasing).

Structural complexity and misinterpretation of data have thus far limited Basin and Range petroleum discoveries. Recently, however, a greater understanding of structure has been attained by extensive drilling in the Eagle Springs, Nevada field. This represents the closest Basin and Range petroleum field to the WSA. Although this field has produced since 1954, no associated discoveries were made there for 22 years. Since extensive drilling and improved interpretation began in the early 1970s, an additional producing field (Trap Springs field) was discovered less than 6 miles away from Eagle Springs. Dry holes are common and are intermixed with producing wells. This gives an indication of the complex and local nature of Basin and Range structure. Petroleum reservoirs here are not usually found as giant fields, but rather as relatively small pockets. The geologic favorability of the WSA is therefore rated f2. It is estimated that up to 10 million barrels of oil or up to 60 billion cubic feet of gas could be recoverable from the WSA. A very low degree of certainty (c1) exists.

- Geothermal

The favorability for geothermal resources in the WSA is rated f2 for low temperature resources with a low (c2) degree of certainty. There are no geothermal leases in the WSA.

- Locatable Minerals

There are no known occurrences of locatable minerals inside the Rockwell WSA. There are 24 claims totaling approximately 480 acres. In addition, there are several claims immediately south of the WSA (T. 13 S., R. 5 W., secs. 29 and 30). The outcrops that comprise these claims overlap the WSA boundary (section 29). Therefore, the possibility exists for a logical mining progression into the WSA in association with these claims. No known exploration has occurred inside the WSA, although such activities have taken place nearby. No known production has resulted from any of this work.

- Lead and Zinc

The entire WSA lies within the Deer Creek-Tintic mineral belt. Ninety-five percent of all gold, silver, copper, lead, and zinc production in Utah has come from three such belts. Primary ores of lead and zinc commonly occur as the sulfide minerals galena (lead sulfide) and sphalerite (zinc sulfide), and the ores usually contain silver, some copper, and minor amounts of gold. In the Tintic district, located only a few miles northeast of the Rockwell WSA, lead and zinc ores occur primarily as irregular replacement deposits in calcareous rocks of Paleozoic age that are folded, faulted, and intruded by monzonite and quartz monzonite. The ore bodies occur in linear zones that are laterally continuous across faults and across strata.

The Rockwell WSA contains favorable carbonate host rocks for large tonnages of lead and zinc, but with very low certainty (c1) because no occurrences are reported from the tract's few exposures of bedrock. On the basis of the nearby large occurrences at Tintic, the WSA may contain favorable (f2) rocks for lead and zinc at depths over 1,000 feet. There is also a favorability for small associated deposits of gold and silver.

- Beryllium

Beryllium minerals have been discovered in parts of west-central Utah, particularly in Tooele and Juab Counties, and in the Mineral Range in Beaver County. These deposits occur chiefly in beryl-bearing pegmatites, as beryl rosettes in granite, and in fine- and course-grained veins. West-central Utah lies at the east end of a beryllium-rich province that extends as far west as central Nevada. The Rockwell WSA lies in a region that is broadly favorable for small deposits (f2) of beryllium with little certainty (c1).

- Tungsten

Tungsten production, reserves, and resources in Utah are comparatively small. Most of the 21 reported deposits occur along the metamorphosed contact between granite and limestone, but tungsten bearing quartz veins are reported from the Tushar Mountains south of the Rockwell WSA. At the south end of the Sheeprock Mountains in the Tintic district, the Tintic western mine (also known as the Desert tungsten mine) produced 7,198 tons of tungsten ore. Other minerals associated with tungsten in minor amounts include molybdenum, magnetite, copper, manganese, zinc and fluorite. The favorability for tungsten in the WSA is rated f2 for small deposits, with very low (c1) certainty (SAI, 1982).

- Uranium

There has been no activity for uranium in the area; however, a potential exists due to thrusting relationships: thrust-faulted Mesozoic strata may underlie the area. This would raise the possibility of the Chinle (Triassic) and/or Morrison (Jurassic) formations occurring there. Around 95 percent of Utah's uranium production has come from these two formations. The probability of recovering uranium from the WSA is low. Therefore, the WSA has a favorability for small deposits (f2) with a very low degree (c1) of certainty.

- Salable Minerals

Salable minerals occur in quantity inside the WSA. Low prices, high transportation costs, and large Statewide reserves, however, usually limit these materials to local markets. No use of salable minerals from within the WSA is presently occurring nor is any demand for salable minerals within the WSA foreseen.

Wildlife Including Special Status Species

The Rockwell WSA provides habitat for a variety of animal species. There are 48 species of mammals, 115 species of birds, 15 species of reptiles, and one amphibian species that may inhabit the area at different times of the year. Although a great diversity exists, no one species can be considered abundant. It is estimated that 50 mule deer migrate into the WSA during the winter and five antelope inhabit the area year-round.

There is one endangered (bald eagle) and one sensitive BLM species (golden eagle) that could inhabit the WSA. Although there is no Federally designated critical habitat in the WSA, the area is considered crucial yearlong habitat for golden eagle. The term "crucial" indicates that the eagles could nest somewhere in the area.

Five Category 2 candidate species could occur in the WSA. These are the ferruginous hawk, long-billed curlew, Swanson's hawk, western snowy plover and white-faced ibis. These bird species frequent areas throughout the Great Basin and other parts of the western United States (refer to Appendix 4 in Volume I for details).

This area is not managed under a detailed wildlife habitat management plan. There are no habitat improvement projects within the WSA boundary, nor are any planned.

Forest Resources

There are approximately 4,758 acres of juniper woodland in the WSA. Potential production estimates for this acreage are approximately 19,000 cords of firewood and approximately 3,000 juniper posts. However, the WSA, as part of the Rockwell ONA/

ACEC, has a management restriction of no woodland harvest.

There is no sign of recent harvest of woodland products. There is some indication that juniper posts were cut several years ago. Forest resources of similar quality are found in abundance in close proximity to the WSA.

Livestock and Wild Horses/Burros

The WSA comprises 22 percent of the 42,437-acre McIntyre Cattle Allotment, utilized by one rancher. Of the 1,125 AUMs within the allotment, the WSA contains approximately 212 AUMs (19 percent). Most of the AUMs are in the northern part of the WSA. Due to the ORV closure, livestock tending is not motorized. Occasional use of the 1 mile way in the WSA is allowed for salt distribution. Drifting sand and lack of water minimize the use of this area. There are no present or proposed range developments in the WSA. Approximately 800 head of cattle are trailed through the WSA as they move to adjacent ranges. The grazing season extends from November 1 to March 31 each year. In the future it is planned to reduce the grazing season to 1 month but increase the number of cattle from the present 225 to 800. The total AUM usage would not change. No predator control has taken place in the McIntyre Cattle Allotment for several years (USDA, APHIS, 1988).

There are no wild horses or burros in the WSA.

Visual Resources

The Rockwell WSA is a unique combination of free-moving, open sand dunes, juniper-covered hills, sagebrush, and grass flats. Old dead juniper trees and the ever-changing shadow effects on the dunes provide a variety of interesting visual settings.

The scarcity, uniqueness, interesting form, and color of free-moving sand dunes lead to a Class A scenic (outstanding) quality rating and VRM Class II management goals on 3,506 acres (38 percent) of the WSA. Class II management allows for activities that may be apparent but subordinate to the landscape character.

The remaining 5,644 acres (62 percent) of the WSA are rated as Class C scenery (average to poor quality) due to low-rolling juniper-covered hills, sagebrush, and grass-covered flats similar to adjoining landscapes. Fifty-four percent of this area (4,972 acres) is rated as VRM Class III due to its proximity to the heavy use areas of Little Sahara and subsequent high sensitivity. The remaining 672 acres (7 percent) are classified as VRM Class IV (activities may be dominant in the landscape) due to the low sensitivity of this more remote northwestern segment (refer to Appendix 7 in Volume I for a description of BLM's VRM system).

Cultural Resources

The only historical feature of note is the namesake of the WSA. The WSA is named for the Rockwell Ranch that lies about 2 miles outside the northwestern edge of the WSA. This ranch is associated with Orin Porter Rockwell, who was a bodyguard for Brigham Young. The Rockwell WSA was probably grazed in conjunction with the ranch. The old Rockwell ranch house, barns, and corrals are northwest of the WSA.

According to BLM cultural resource site maps (USDI, BLM, 1988), there are no prehistoric or historic sites recorded in the WSA. The potential for finding small temporary sites reflecting Fremont use of the wild food resources in the area is good. There is also some potential for finding Early Man sites in the sand dunes reflecting use of the area when the climate and topography were very different.

Recreation

The Rockwell WSA coincides with the boundaries of the Rockwell Natural Area (minus 480 acres), comprising 17 percent of the 60,000-acre Little Sahara Recreation Area.

Most of the visitors to Little Sahara Recreation Area (approximately 396,000 visitor days annually) originate from population centers along the Wasatch Front (Ogden, Salt Lake City, Orem, and Provo). Recreationists participate in a wide variety of activities during their visits to the Little Sahara Recreation Area, but some form of motorized recreation is the primary focus for a majority of the users. The focus of nearly two-thirds of the recreationists in Little Sahara is either off-road driving or motorcycling, although visits frequently include other activities such as camping, hiking, photography, wildlife viewing, and nature study.

The northwestern portion of Little Sahara has been left natural as the Rockwell ONA/ACEC. Although smaller than the ORV area, the ONA/ACEC contains the same terrain types including sand dunes, juniper-covered hills, and sagebrush flats. However, no

vehicles are allowed. Animal and plant species are protected. The Rockwell ONA/ACEC has traditionally received less than 1 percent (3,960 visitor days annually) of the total recreation use of the Little Sahara Recreation Area.

Twelve primitive and unconfined types of recreation were found in the WSA. Nature study and photography opportunities are very good, primarily due to the presence of unique sand dunes and the accompanying wildlife and vegetation ecosystem. Although available, opportunities for backpacking, camping, dayhiking, horseback riding, hunting, rock climbing, cultural sightseeing, geologic sightseeing, scenic vistas, and wildlife sightseeing are not good due to the small size and configuration of the WSA, lack of water, flat terrain, lack of destination points, and lack of significant features that could be expected to attract participants.

The largest living and dead juniper trees (Juniperus osteosperma) growing in the Little Sahara dunes are located within the WSA. These picturesque trees, the unusual Atriplex species and other forms of plant and animal life existing in a natural state in the sand dune environment combine to provide outstanding opportunities for scientific, educational, and recreational uses. Elementary, high school, and university groups visit the area to observe these resources existing in a natural state within this unique sand dune environment.

Land Use Plans

No State or private lands are within the WSA. There are no rights-of-way within the WSA nor are there any applications pending. No other surface rights have been granted.

Juab County does not have a current master plan, but has nearly completed a plan that does not specifically address wilderness. The county generally prefers multiple use, the concept being that open spaces be used for many purposes on public lands (Fawcett, 1985). Nevertheless, the Juab County Commission has endorsed the Consolidated Local Government Response to Wilderness which opposed wilderness designation of Utah BLM lands.

The current BLM land use plans for the WSA are the House Range RMP (USDI, BLM, 1987c) and the Little Sahara Recreation Area Management Plan (USDI, BLM, 1979b). The House Range RMP has been reviewed by the Governor of the State of Utah for consistency with State plans and policies. The State did not indicate that the plan was inconsistent with State and local planning (Bangerter, 1986). The House Range RMP and the Little Sahara Recreation Area Management Plan designated the Rockwell WSA as an ACEC, with allowable uses as identified in the Description of the No Action/No Wilderness Alternative section. Wilderness designation is part of BLM's multiple-use concept. The BLM land use plans are linked to the Statewide Wilderness EIS through inclusion of the present plan as the No Action/No Wilderness Alternative.

Socioeconomics

- Demographics

The Rockwell WSA is located in Juab County, Utah. Although many visitors to the WSA originate from the Wasatch Front communities more than 50 miles to the northeast or in Delta about 25 miles to the south, any noticeable socioeconomic conditions are related to Juab County.

Census figures for 1980 show a Juab County population of 5,550 (an increase of 20.9 percent since 1970). The 1987 population of Juab County is approximately 5,890. Nephi (3,285), located about 28 miles east of the WSA, is the largest community in Juab County. Table 6 shows the 1980 census figures and projects population to the year 2010.

Table 6
Baseline and Projected Population and Employment Growth
Juab County

	1980	1990	2000	2010
Population	5,550	5,900	6,200	7,250
Employment	2,265	2,300	2,600	3,100

Source: Utah Office of Planning and Budget, 1987.

- Employment

The government (Federal, State, and local) and trade sectors are the most important in terms of employment in the Juab County economy. Mining has been declining and provides less than 10 percent of the employment in Juab County. Table 6 shows the baseline (1980) and projected employment for Juab County. Juab County is part of the Central MCD.

Table 7 shows the baseline (1980) and projected employment by sources for the Central MCD. In 1980, the leading employment sectors for the MCD were government (21 percent), trade (14 percent), and proprietorships (12 percent). Mining provided

approximately 4 percent of the direct employment in the MCD.

Table 7
Central Multi-County District Employment[a]

	1980	1990	2000	2010
Agriculture	3,649	3,500	3,600	3,800
Mining	706	700	800	900
Construction	822	1,400	2,200	2,200
Manufacturing	2,047	1,900	2,200	2,600
Transportation, Utilities	589	1,300	1,400	1,500
Trade	2,604	3,400	4,000	4,900
Finance, Insurance, Real Estate	347	400	500	600
Services	1,439	2,300	2,900	3,500
Government	3,919	4,100	4,100	4,900
Nonfarm Proprietors	2,278	2,800	3,300	4,100
Totals	18,400	21,800	24,600	29,000

Source: Utah Office of Planning and Budget, 1987.

[a]Includes Juab, Millard, Piute, Sanpete, Sevier, and Wayne Counties.

It is projected that by the year 2010 employment in the MCD will increase by about 58 percent. Trade will increase to 17 percent and proprietorships to 14 percent of the total, while government will decline to 17 percent and mining to 3 percent of the total.

- Sales and Revenues

Economic-related activities in the WSA include mineral exploration, livestock production, and recreation. Table 8 summarizes local sales and Federal revenues from the WSA. Appendix 9 in Volume I identifies the multipliers used to estimate sales and revenues.

Table 8
Sales and Revenues

Source	Estimated Annual Local Sales[a]	Estimated Annual Federal Revenues
Oil and Gas Leases	0	0
Mining Claim Assessment	$ 2,400	0
Livestock Grazing	$ 4,240	$ 326
Recreational Use	$ 16,236	0
Total	$22,876	$ 326

Sources: USDI, BLM, 1982a; Appendix 9 in Volume I.

[a]Local sales represent money potentially spent. They do not account for the total income that would be generated by these expenditures.

Currently, the WSA provides 212 AUMs of forage to local livestock operators each year. At the current BLM price of $1.54 per AUM, the WSA accounts for $326 in Federal grazing revenue annually. Fifty percent of the grazing fee is allocated back to the local BLM office for construction of rangeland improvements. Marketing of livestock which use the WSA contributes to local income. About $4,240 of livestock sales, including $1,060 in ranchers' return on investment and labor, is attributed to the AUMs in the WSA.

No oil and gas or mineral production has occurred in the WSA. Therefore, mineral and energy resource production from the WSA has not contributed to local employment or income. No current leases or lease resources can be attributed to the WSA.

The WSA's nonmotorized recreational use is relatively high due to influences of the other portions of the Little Sahara Recreation Area. Motorized recreational use in the WSA is not allowed. The actual amount of income generated locally from recreational use in the WSA is unknown. However, an approximate range of expenditures can be deduced (Dalton, 1982). This study indicates that the Statewide average local expenditures per recreational visitor day for all types of recreation in Utah are approximately $4.10. The recreational use for Rockwell WSA is estimated as about 3,960 visitor days per year resulting in a total estimated local expenditure of $16,236.

ENVIRONMENTAL CONSEQUENCES OF ALTERNATIVES

This section describes the environmental consequences of implementing the alternatives. The analysis is based on the BLM management actions and anticipated activities presented in the Introduction Volume II and the Description of the Alternatives for the Rockwell WSA.

No Action/No Wilderness Alternative (Proposed Action)

- Impacts on Wilderness Values

If the WSA is not designated wilderness, the wilderness values in the WSA will not receive the protection afforded by application of the Wilderness Management Policy (BLM Manual 8560). Wilderness values in the WSA would, however, continue to be protected by limitations placed on potential surface-disturbing activities (i.e., the entire area would remain closed to ORV use and to oil and gas leasing, would be withdrawn from mining claim location, and 2,654 acres would be managed with VRM Class II objectives).

In the foreseeable future, no development is anticipated that would affect wilderness values. Wilderness values in the WSA including naturalness, opportunities for solitude and primitive recreation, and special features (i.e., scenic values, endangered or sensitive animal and plant species, and sand dunes) would continue to remain as at present.

Total elimination of ORV use from the area would continue to be difficult even with signing and patrol, because of (1) the high amount of ORV use at Little Sahara and all areas surrounding the Rockwell WSA; and (2) the eastern and southern boundaries of the WSA are difficult to define. Outside sights and sounds of ORV uses in surrounding areas would continue to detract from opportunities for solitude and primitive recreation in about 45 percent (4,106 acres) of the WSA.

Conclusion: Because BLM would manage the area as an ONA/ACEC, wilderness values including naturalness, opportunities for solitude and primitive recreation, and special features would remain as they are. Outside sights and sounds would continue to detract from opportunities for solitude and primitive recreation in about 45 percent (4,106 acres) of the WSA.

Outside sights and sounds of ORV use in surrounding areas would continue to detract from opportunities for solitude and primitive recreation in about 45 percent (4,106 acres) of the WSA. It would also continue to be difficult to totally eliminate ORV use from the area, even with signing and patrol, because (1) the amount of ORV use occurring at Little Sahara and other areas surrounding the Rockwell WSA is high; and (2) the eastern and southern borders of the WSA are difficult to define.

Conclusion: Wilderness values including naturalness, outstanding opportunities for solitude and primitive recreation, and special features would be preserved. In spite of wilderness designation, outside sights and sounds would continue to detract from opportunities for solitude and primitive recreation in 45 percent (4,106 acres) of the WSA.

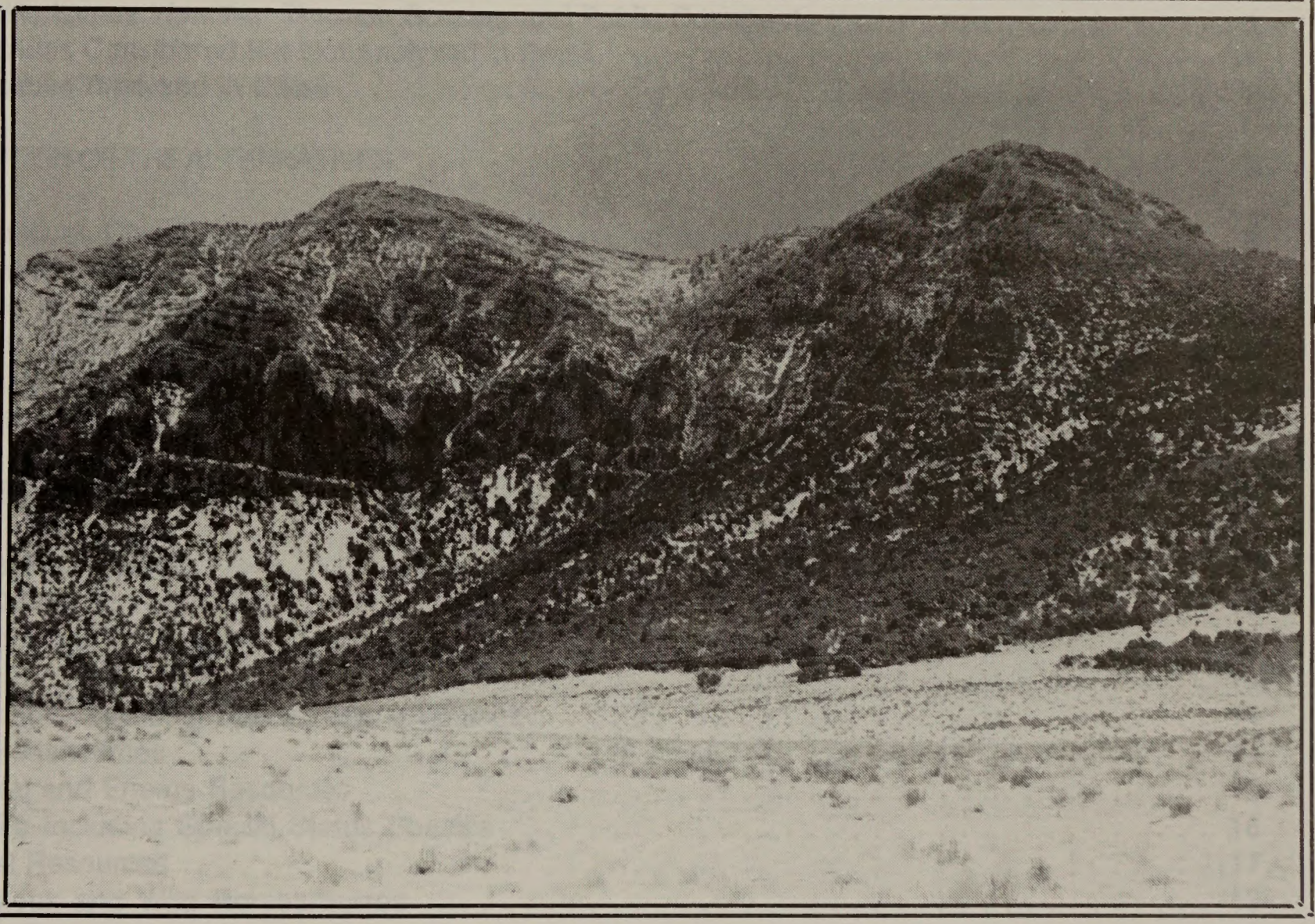
All Wilderness Alternative (9,150 Acres)

The major difference between the No Action/No Wilderness and All Wilderness Alternatives is that, if designated as wilderness, the area would be managed as part of the NWPS. Closures and restrictions would be mandated by Congress rather than administratively by BLM.

- Impacts on Wilderness Values

Wilderness designation would preserve the area's wilderness values including naturalness, opportunities for solitude and primitive recreation, and special features (i.e., scenic values, endangered or sensitive animal and plant species, and sand dunes). With this alternative, the potential for surface-disturbing activities that could impair wilderness values would be eliminated through management under VRM Class I (which generally allows for only natural ecological change), through continuation of the ORV closure, and through closure of the entire area to future mineral leasing, mining claim location, and mineral sales. Development that would result in loss of wilderness values is even less likely with this alternative than with the No Action/No Wilderness Alternative.

Swasey Mountain WSA



SWASEY MOUNTAIN WSA

TABLE OF CONTENTS

INTRODUCTION 1

General Description of the Area 1
Changes for the Final EIS 1
Specific Issues Identified Through Scoping and Public Comment 1
Issues Considered But Not Analyzed in Detail 1
Issues Analyzed in Detail 2

DESCRIPTION OF THE ALTERNATIVES 3

Alternatives Considered and Eliminated from Detailed Study 3
Alternatives Analyzed 3
No Action/No Wilderness Alternative 3
All Wilderness Alternative 5
Partial Wilderness Alternative (Proposed Action) 7
Summary of Environmental Consequences 10

AFFECTED ENVIRONMENT 10

Wilderness Values 10
Air Quality 13
Geology and Topography 13
Soils 14
Vegetation Including Special Status Species 14
Water Resources 14
Mineral and Energy Resources 15
Wildlife Including Special Status Species 16
Forest Resources 17
Livestock and Wild Horses/Burros 17
Visual Resources 18
Cultural Resources 18
Recreation 18
Land Use Plans 19
Socioeconomics 19

ENVIRONMENTAL CONSEQUENCES OF ALTERNATIVES 21

No Action/No Wilderness Alternative 21
All Wilderness Alternative 23
Partial Wilderness Alternative (Proposed Action) 25

SWASEY MOUNTAIN WSA

(UT-050-061)

INTRODUCTION

General Description of the Area

The Swasey Mountains WSA is located in the north end of the House Range, a 50-mile-long blockfaulted mountain range. The Swasey Mountain WSA consists of 49,500 acres of public land in northwestern Millard County, Utah. The WSA is located approximately 35 miles west of Delta, Utah. It is north of the BLM Howell Peak WSA and is separated from it by the road through Dome Canyon. Major features include Swasey Mountain (elevation 9,669 feet), Tatow Knob (elevation 8,416 feet), several large caves, fossil beds, and wild horses. Although pinyon-juniper woodland is the dominant vegetation type, the high elevations allow for pockets of Douglas fir, white fir, limber pine, Ponderosa pine, aspen, and bristlecone pine.

Climate is characterized by limited precipitation (12 to 20 inches annually), low relative humidity, and large annual and daily ranges in temperature. Temperatures range from -14 degrees Fahrenheit (F) to 105 degrees F depending on season and elevation.

Changes for the Final EIS

In response to public comment, and changing resource conditions and plans in the WSA, the following changes have been made since publication of the Draft EIS.

1. Descriptions of the No Action/No Wilderness and Partial Wilderness Alternatives have been revised to coincide with the House Range RMP, which has replaced the West Desert RMP since publication of the Draft EIS. The main feature of the RMP is establishment of SRMA in the Swasey Mountains.

2. The Partial Wilderness Alternative (Proposed Action), analyzed in the Final EIS, would designate as wilderness 34,376 acres, or 124 acres less than the Partial Wilderness Alternative which was presented in the Draft EIS. However, the partial has been modified by adding 5,928 acres in the southern end of the WSA and deleting 6,052 acres in the northern end. Boundaries were changed to coincide more closely with the boundaries of mineralized areas and high-quality wilderness values. The changes, in fact, are greater than the net 124-acre reduction would indicate (compare Map 3 in both the Draft and Final EIS).

3. The anticipated surface disturbance presented in the Draft EIS (240 acres) was based on the assumption that all mineral and other resources potentially within the WSA would be developed sometime in the future without consideration of technical or economic feasibility. In response to public comments relative to the feasibility of developments, the disturbance estimates have been revised to focus on activities projected to be feasible within the foreseeable future (see Appendix 6 in Volume I). This resulted in a reduction of surface disturbance estimates from the 240 acres reported in the Draft EIS to 50 acres of surface disturbance for the Final EIS.

Specific Issues Identified Through Scoping and Public Comment

- Issues Considered But Not Analyzed in Detail

In addition to the issues discussed and eliminated from further consideration in the Introduction to Volume II (i.e., impacts on air quality, geology and topography, soils, and land use plans and policies), the following issues or impacts specific to the Swasey Mountain WSA were considered but are not analyzed in detail in the Final EIS for the following reasons.

1. Vegetation Including Special Status Species: Estimates of surface disturbance without wilderness designation have been revised downward from the 240 acres reported in the Draft EIS to 50 acres of mineral-related surface disturbance in the Final EIS. Given this new scenario, the impacts of direct disturbance of vegetation would be reduced and would not be significant with any of the alternatives (less than 0.1 percent of the WSA). There are no threatened, endangered, or proposed threatened or endangered plant species known to occur within or near the WSA. In any

STATEWIDE.
POCKET MAP
WSA
NO. 6
SEE VOL.I

event, BLM would conduct site-specific clearances of potentially disturbed areas and consult with FWS concerning impacts on threatened or endangered plant species. Therefore, impacts on vegetation are not analyzed in detail for the Swasey Mountain WSA.

2. Water Resources: There are no perennial streams and only five springs in the Swasey Mountain WSA. Therefore, impacts on water uses and quality are not significant issues for analysis in the Final EIS.

3. Forest Resources: There are about 1,100 acres of conifer forest in the WSA, and 23,000 acres of non-commercial pinyon and juniper woodland. However, only 5 to 6.5 percent of the resource is accessible and for these reasons, impacts on forest resources is not significant issues for analysis in the Final EIS.

4. Livestock Management: The public is concerned that wilderness designation would interfere with livestock management by placing restrictions on access for maintenance of existing range improvements, moving of livestock, and by preventing future range improvements. Restrictions would be placed on predator control and livestock losses could increase in both the wilderness area and on adjacent lands. However, livestock management and maintenance in the Swasey Mountain WSA is done by horseback. There were no confirmed livestock losses due to predators in the 1986 to 1987 period. Livestock grazing levels and maintenance would be allowed. For these reasons, the impacts on livestock management are not significant issues for the Swasey Mountain WSA.

5. Wild Horses: Approximately 77 wild horses are found in portions of the WSA. Wild horses would continue to utilize the WSA with any of the alternatives. No improvements have been planned for the horses. Therefore, impacts on wild horses are not significant issues for the Swasey Mountain WSA.

6. Visual Resources: As discussed above for vegetation, only 50 acres of surface disturbance are projected for the WSA in the Final EIS. Therefore, visual resources would not be significantly affected. Visual resources are not addressed in the Final EIS as a separate topic, but are addressed in relation to naturalness in the Wilderness Values section.

7. Cultural Resources: Cultural resources could be destroyed by surface-disturbing projects, use of vehicles, or vandalism. Eleven cultural resource sites (none of National Register quality) have been recorded in the southern portion of the Swasey Mountain WSA. Mineral-related surface disturbance is projected for the northern end of the wash and known sites would not be affected. Terrain and surface features limit vehicle use to the 11 miles of ways inside the WSA. Additionally, inventories for the purpose of site recordation and mitigation of impacts would take place prior to any surface disturbance in the future. Given these conditions, impacts on cultural resources are not significant issues for the Swasey Mountain WSA.

- Issues Analyzed in Detail

The significant issues for the Swasey Mountains WSA are:

1. Impacts on the wilderness values of naturalness, opportunities for solitude and primitive recreation, and special features.

2. Impacts on mineral and energy exploration and production.

3. Impacts on wildlife habitat and populations including special status species.

4. Impacts on recreational use.

5. Impacts on economic conditions.

Comments made during the public comment period for the Draft EIS addressed a variety of topics including:

1. Inventory phase of the Wilderness Review.

2. Importance of benchlands as wildlife habitat and buffer zones for wilderness.

3. Rationale for BLM's proposed action.

4. Additional alternatives containing State lands.

5. Need for additional resource inventories.

6. The value of caves in the WSA.

7. Uniqueness of vegetation types.

8. Underrating of mineral values, particularly disseminated gold.

9. Underestimates of wildlife populations.

10. Scenic-quality ratings.

11. Additional data on fossils and other special features.

12. Mapping errors for State lands.

See Volume VII-B for responses to general comments applicable to all WSAs and/or the Statewide analysis, and Volume VII-C, Section 6, for responses to specific comments about the Swasey Mountain WSA.

DESCRIPTION OF THE ALTERNATIVES

Alternatives Considered and Eliminated from Detailed Study

Additional alternatives were submitted as public comments on the Draft EIS. A new alternative of 46,000 acres that would exclude areas along the western boundary of the WSA, but add Federal and State lands outside the WSA on the northern, eastern, and southern boundaries was suggested. This alternative is not analyzed in detail because the acreage outside the WSA was considered and eliminated during the BLM's wilderness inventory, and because the wilderness review is directed at Federal rather than State lands.

Public comments also suggested a Partial Wilderness Alternative that would exclude the north end of the WSA to allow for development of disseminated gold, and an alternative that would add the southern part of the WSA to the Partial Wilderness Alternative. Neither alternative is analyzed independently. However, BLM has considered the minerals data and the wilderness values and has combined the two suggestions into a 34,376-acre Partial Wilderness Alternative that is analyzed in the Final EIS.

Alternatives Analyzed

Three alternatives are analyzed for this WSA: (1) No Action/No Wilderness; (2) All Wilderness (49,500 acres); and (3) Partial Wilderness (Proposed Action) (34,376 acres). A description of BLM's management practices with each alternative follows. Where management intentions have not been clearly identified, assumptions are made based on management projections. These assumptions are indicated in each case. The assumed management actions presented in the Introduction to Volume II are also applicable.

- No Action/No Wilderness Alternative

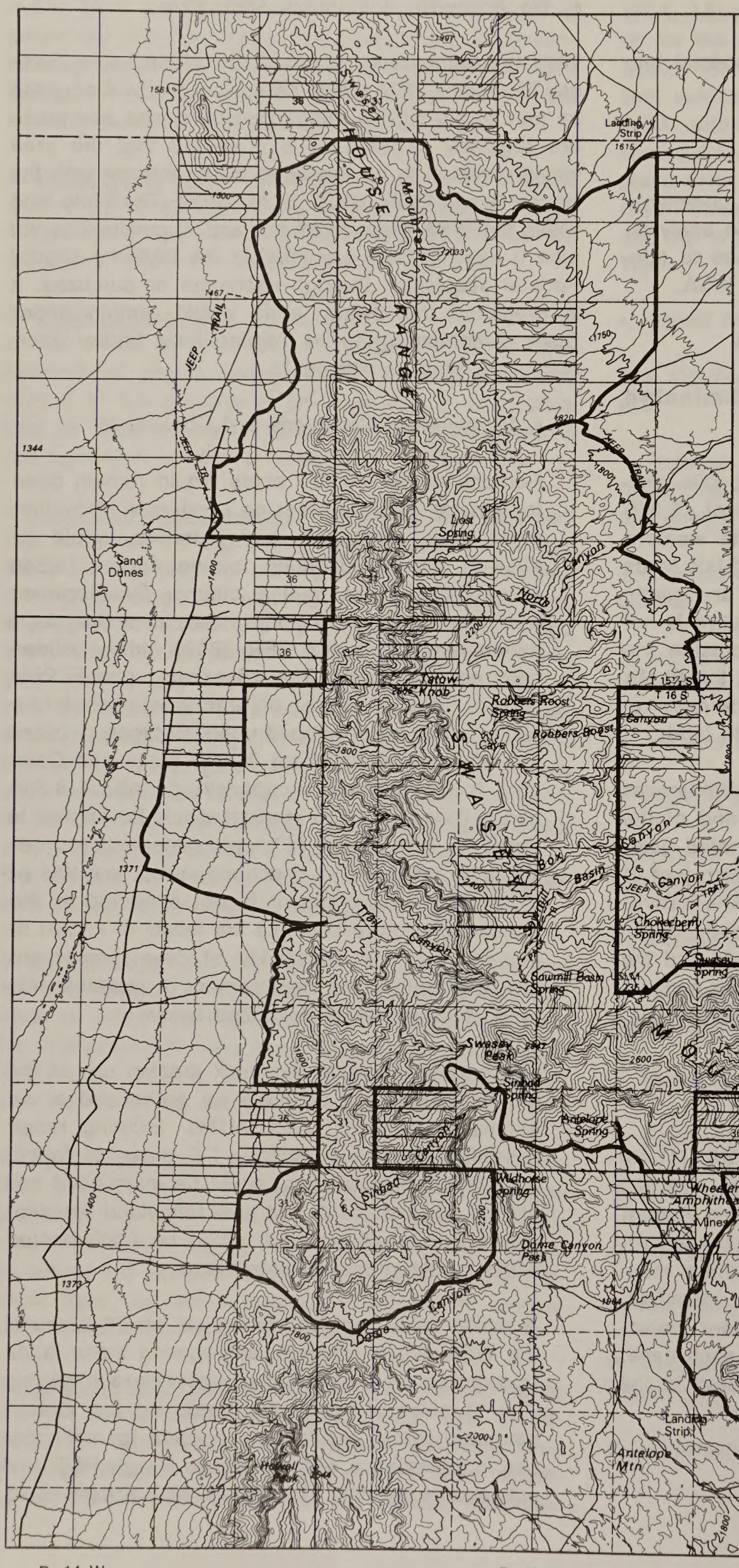
With this alternative, none of the 49,500-acre Swasey Mountains WSA would be designated by Con-gress as part of the NWPS. Although BLM's land use plans are regularly updated, it is projected that the area would continue to be managed in accordance with the House Range RMP (USDI, BLM, 1986). The State land within the WSA (refer to Map 1 and Appendix 3 in Volume I) has not been identified in the RMP for special Federal acquisition through exchange or purchase. It is projected that State lands would remain under State ownership (refer to Volume I for further information on State in-holdings).

- Management Conditions and Constraints

Portions of the 49,500 acres would remain open to mineral location, leasing, and sale. Development work, extraction, and patenting would be allowed on 177 existing mining claims (3,540 acres) and future mining claims. Development would be regulated by unnecessary or undue degradation regulations (43 CFR 3809) without wilderness considerations. The 15 existing post-FLPMA leases (22,602 acres, oil and gas) and future leases could be developed under Category 1 (standard stipulations) on about 24,990 acres and Category 3 (no surface occupancy) on about 6,800 acres. Category 4 (no leasing) would be applied to about 17,710 acres. Although mineral resources would be managed as described above, leasable exploration or development is not expected in the foreseeable future because the levels of known resources and the probability of development are low. Exploration and development of locatable minerals is projected as described below.

The present domestic livestock grazing use of the entire WSA would continue as authorized at an estimated level of 1,321 AUMs. Existing range developments (five springs, 1.5 miles of fence, and 20 acres of seeding) could be maintained and utilized as at present, and new rangeland developments (none are planned) could be implemented without wilderness considerations.

A public water reserve withdrawal on 50 acres of the WSA would continue, segregating those lands from public land laws and nonmetalliferous mining. The 11 miles of ways, plus bordering and cherry-stemmed roads, would remain open for vehicular use in accordance with the House Range RMP and subsequent planning documents. New access could


T. 15 S.
T. 16 S.
T. 17 S.
R. 14 W.
R. 13 W.
R. 12 W.
Swasey Mountain
Landing Strip
Jeep Trail
Sand Dunes
Lost Spring
North Canyon
Tatow Knob
Robbers Roost Spring
Robbers Roost Cave
Canyon
Bow Basin
Trail Canyon
Sawmill Basin Spring
Swasey Peak
Sinbad Spring
Antelope Spring
Wildhorse Spring
Sinbad Canyon
Dome Canyon Pass
Dome Canyon
Wheeler Amphitheater Mines
Antelope Mtn
Coyote Knolls
Corral
Chokecherry Spring
Swasey Spring
Mud Spring
Map 1
LAND STATUS
Swasey Mountain WSA
UT-050-061
Legend
WSA Boundary
State Lands Within or Adjacent to WSA
BLM Administered Land Within or Adjacent to WSA
SCALE IN MILES
0 1 2
SCALE IN KILOMETERS
0 1 2 3
N
ELEVATION EXPRESSED IN METERS

be developed. ORV use would be limited to existing roads, ways, and trails on 34,500 acres. About 15,000 acres would be open to ORV use under the House Range RMP. Even though portions of the area would be designated open by the land use plans, ORV use is expected to be restricted to existing roads, ways, and trails by steep terrain and surface features of the WSA.

The entire 49,500-acre area would continue to be open to woodland product harvest. There is only limited noncommercial harvest of forest products at the present time, and increased harvest is not expected because of limited quantities of products, steep terrain, lack of access, and low demand. The area would continue to be managed under VRM Class II on 38,010 acres and Class IV on 11,490 acres.

- Action Scenario

BLM anticipates that implementation of the No Action/No Wilderness Alternative would result in approximately 50 acres of surface disturbance in the foreseeable future. About 48 acres of the projected disturbance would result from exploration and development of a disseminated gold deposit (a locatable mineral) located in the north end of the WSA. Activities would include the construction of up to 4 miles of exploration and access roads, drill pads, an open pit mine, and overburden disposal areas. These activities would be an extension of a much larger zone of activity located outside of the WSA. Based on similar projects in the vicinity of the WSA, it is projected that mining operations would require a maximum of 20 employees at any one time. An additional 2 acres of surface disturbance would result from up to 1 mile of access road construction to an in-held State section located in the area of projected mineral development (T. 15 W., R. 13 S., sec. 16).

Development would be regulated by the unnecessary and undue degradation guidelines of 43 CFR 3809 regulations. The developed claims would be patented and the disturbance would remain over the long term. Exploration and access roads would also likely remain in place over the long term.

No leasable mineral exploration or development is projected for the WSA in the foreseeable future. No rangeland, wildlife habitat, or watershed improvement projects are planned.

Additional locatable mineral exploration and development may occur over the long term. The degree of long-term development is unknown.

No disturbance from ORV activity is projected due to management and terrain constraints.

Recreation use is projected to increase over the current estimated use of 500 annual visitor days at a rate of 2 to 7 percent annually. About 52 percent of the use would continue to be primitive in nature, and about 48 percent would involve vehicular access on existing roads and ways and 5 miles of new roads related to mineral activities.

- All Wilderness Alternative

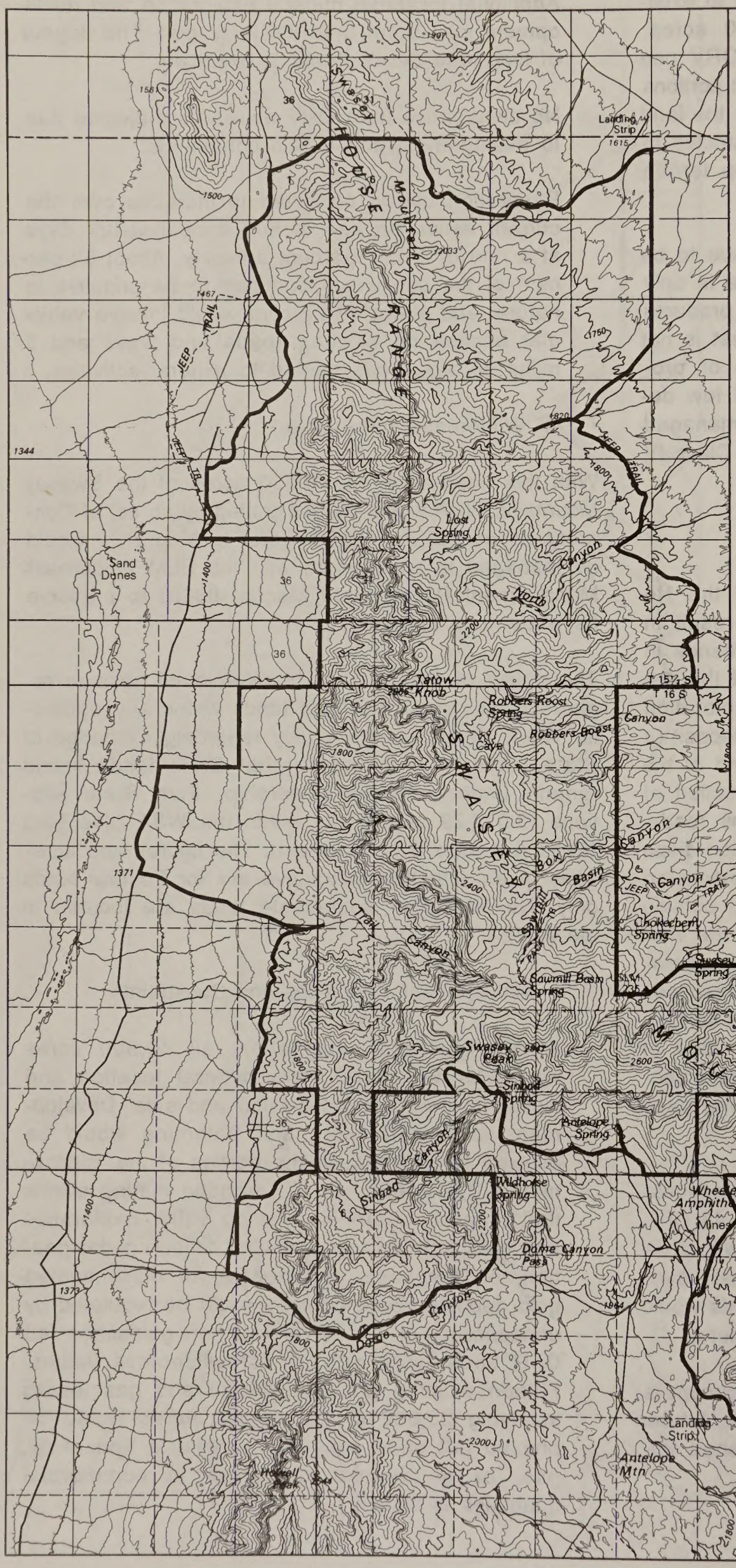
With this alternative, all 49,500 acres of the Swasey Mountains WSA would be designated by an act of Congress as part of the NWPS (refer to Map 2). It would be managed in accordance with the BLM Wilderness Management Policy (BLM Manual 8560) to preserve its wilderness character.

The policy of the State is to reserve its position regarding exchange of in-held lands within any particular WSA. Based on this policy regarding exchange of State lands, it is projected that State lands would remain under existing ownership. Five State sections (3,077.72 acres) are within the WSA (see Map 1 and Appendix 3 in Volume I). The figures and acreages given with this alternative are for Federal lands only. No private or split-estate lands are located in the WSA.

- Management Conditions and Constraints

After wilderness designation, all 49,500 acres would be withdrawn from mineral location and closed to new mineral leasing and sale. Development work, extraction, and patenting would be allowed to continue on the portion of the approximately 3,540 acres in 177 existing mining claims that may be determined to be valid. Exploration and development are projected following designation, on the basis of potential for disseminated gold deposits. Development would be regulated by unnecessary or undue degradation guidelines (43 CFR 3809) with concern for wilderness values. Fifteen existing post-FLPMA oil and gas leases involving 22,602 of the 49,500 acres would be phased out upon expiration, unless a find of oil, gas, or geothermal resources in commercial quantities is shown.

SWASEY MOUNTAIN WSA



Map 2
ALL WILDERNESS ALTERNATIVE
Swasey Mountain WSA
UT-050-061

Legend

All Wilderness Alternative (49,500 acres)

SCALE IN MILES
0 1 2

SCALE IN KILOMETERS
0 1 2 3

ELEVATION EXPRESSED IN METERS

N

The estimated 1,321 AUMs on parts of four allotments in the WSA would remain available to livestock as presently allotted. After designation, existing developments (five springs, 1.5 miles of fence, and 20 acres of seeding) could be used and maintained in the same manner as in the past based on practical necessity and reasonableness. A herd of about 100 wild horses would continue to be allowed. A public water reserve withdrawal on 50 acres would continue.

About 11 miles of existing vehicular ways would not be available for vehicular use except as indicated above. About 25 miles of the WSA boundary intermittently follow existing gravel and dirt roads or jeep trails that would remain open to vehicular travel. Two short segments (0.25 mile near Trail Canyon and 0.25 mile near Antelope Spring) would be cherry-stemmed and remain open to vehicular access. Access to the high country would continue to be allowed on the Sinbad Overlook road.

Visual resources on 49,500 acres would be managed in accordance with VRM Class I standards, which generally allow for only natural ecological change.

Primitive recreation use is projected to increase over the current estimated primitive use of 260 annual visitor use days at a rate of 2 to 7 percent per year. Recreational use involving vehicular access would be eliminated.

- Partial Wilderness Alternative (Proposed Action)

With this alternative, 34,376 acres of the Swasey Mountain WSA would be designated as wilderness (refer to Map 3). The objective of this alternative is to analyze as wilderness that portion of the WSA containing sufficient mandatory wilderness characteristics to qualify as wilderness while allowing for mineral production in the northern portion of the WSA (see Appendix 11 in Volume I). The 34,376 acres analyzed as wilderness with this alternative include the central and most mountainous portions of the WSA. The northern end of the WSA and fringe areas would be managed in accordance with the House Range RMP and subsequent BLM planning, as described for the No Action/No Wilderness Alternative. The 34,376-acre area designated as wilderness would be managed in accordance with the BLM Wilderness Management Policy (BLM Manual 8560), as described in the All Wilderness Alternative.

- Action Scenario

BLM anticipates that 16 acres of surface disturbance would result from locatable mineral-related activities as discussed in the No Action/No Wilderness Alternative, including access road construction to an in-held State section. Up to 2 miles of access road construction would occur.

The mining operations would be developed under the unnecessary and undue degradation guidelines of the 43 CFR 3809 regulations. It is projected that developed claims would be patented and disturbance would remain over the long term.

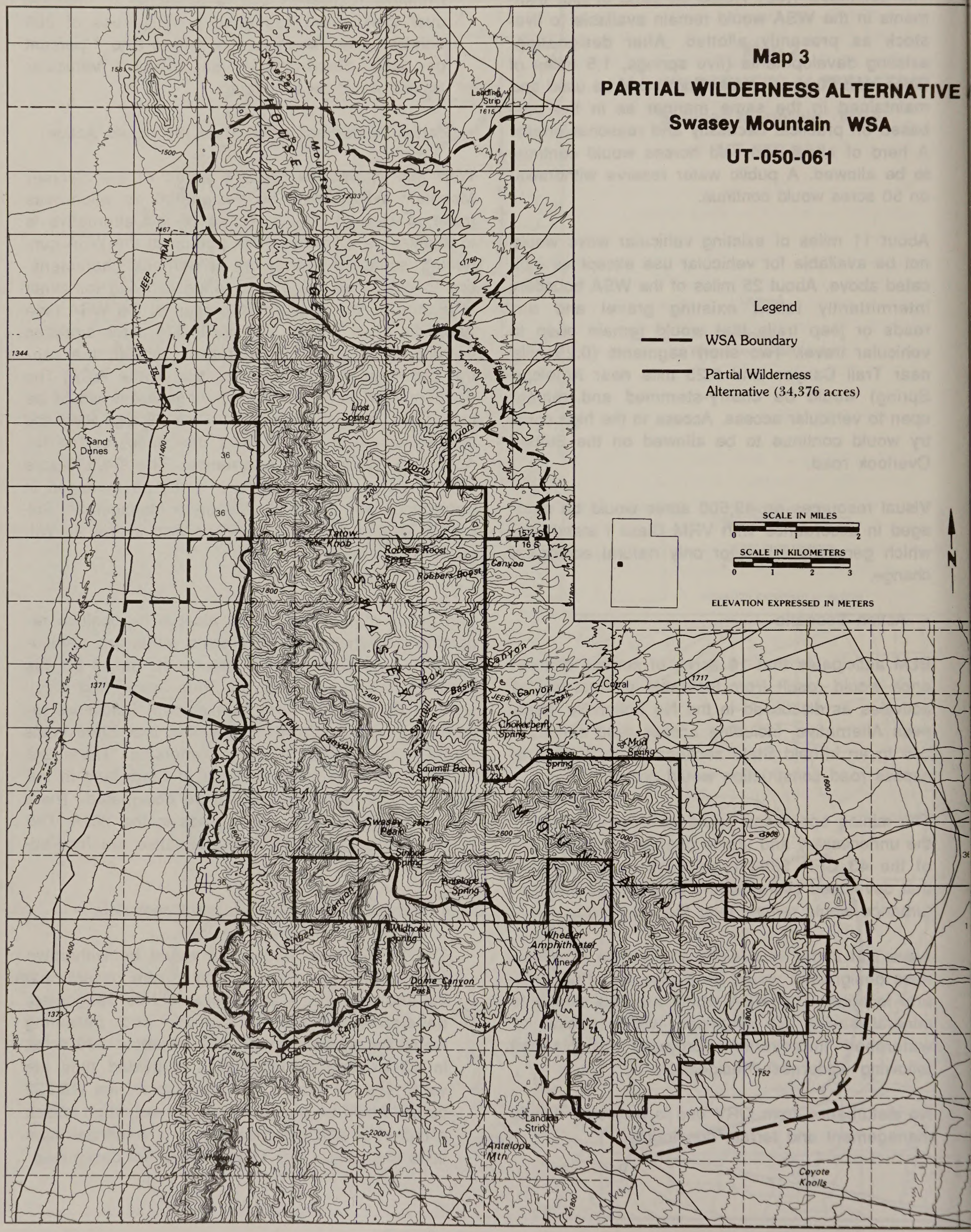
Areas not under valid claim at the time of wilderness designation would be closed to further mineral location. The WSA would also be closed to mineral leasing. No rangeland, wildlife habitat, or watershed improvement projects are planned following wilderness designation.

No disturbance from ORV use is projected due to management and terrain constraints.

The policy of the State is to reserve its position regarding exchange of in-held lands within any particular WSA (see Chapter 1 in Volume I). Based on this policy regarding exchange of State lands, and provisions of BLM's Wilderness Management Guidelines regarding private lands, it is projected that State lands would remain under existing ownership. There are 1,797.72 acres in three sections of State land in the portion of the WSA that would be designated. There are no private or split-estate lands in the WSA. The figures and acreages for this alternative are for Federal lands only.

- Management Conditions and Constraints

The 34,376-acre wilderness would be withdrawn from mineral entry and closed to new mineral leasing and sale. In the area that would be designated, development work, extraction, and patenting would be allowed to continue on about 260 acres in 13 existing mining claims, provided they are valid. The 14 existing oil and gas leases (18,722 acres) would be phased out upon expiration unless a find of oil and gas resources in commercial quantities is shown. The 15,124 acres not designated


Map 3
PARTIAL WILDERNESS ALTERNATIVE
Swasey Mountain WSA
UT-050-061
Legend
WSA Boundary
Partial Wilderness Alternative (34,376 acres)
SCALE IN MILES
0 1 2
SCALE IN KILOMETERS
0 1 2 3
N
ELEVATION EXPRESSED IN METERS
T. 15 S.
T. 16 S.
T. 17 S.
R. 14 W.
R. 13 W.
R. 12 W.
Swasey Mountain
Sand Dunes
Lost Spring
North Canyon
Tatow Knob
Robbers Roost Spring
Robbers Roost Cave
Box Canyon
Box Basin
Sawmill Basin Spring
Swasey Peak
Swasey Spring
Mud Spring
Cholecherry Spring
Coral Canyon
Jeep Trail
Sinbad Spring
Antelope Spring
Wildhorse Spring
Wheeler Amphitheater Mines
Dome Canyon Pass
Landing Strip
Antelope Mtn
Coyote Knolls

wilderness would be open to future mineral location, leasing, and sale. Development work, extraction, and patenting of 164 existing mining claims (3,280 acres) and future mining claims could occur in the 15,124-acre area if claims are valid. The area that would not be designated would be managed as oil and gas leasing Category 1 (standard stipulations) on 13,480 acres, Category 3 (no surface occupancy) on 324 acres, and Category 4 (no leasing) on 1,320 acres. The post-FLPMA oil and gas lease (3,880 acres), as well as future leases in this area, could be developed without concern for wilderness values. Although mineral resources would be managed as described above, mineral exploration or development are not expected in the designated area because resource potentials are lower than in the nondesignated portion. Exploration and development of locatable minerals is anticipated for the nondesignated portion because of potential for disseminated gold. Oil and gas exploration or development are not expected in the WSA because the levels of known resources and potential of development are low. Appendix 6 in Volume 1 explains the mineral exploration and development projections.

Domestic livestock grazing would continue to occur in the 34,376-acre wilderness area. The 305 AUMs on parts of three allotments in the designated area would remain available to livestock as presently allotted. The existing developed springs, fencelines, and seeding would be in the designated area and could be used and maintained in the same manner as in the past based on practical necessity and reasonableness. Additional rangeland developments are not planned for the WSA. In the 15,124-acre nonwilderness area, grazing use (1,016 AUMs) would continue as authorized in the RMP.

The public water reserves withdrawal would be maintained with 40 of the 50 acres in the designated area

The mountains and canyons that would comprise the 34,376-acre Swasey Mountains wilderness would be closed to ORV use. About 8 miles of existing ways would not be available for vehicular use except in situations described under the All Wilderness Alternative. The remainder of the unit, including the existing gravel roads and jeep trails that border the WSA and 3 miles of ways, would remain open to vehicular travel. The 0.25 mile of road cherry-stemmed near Antelope Spring would remain open to vehicles and access would continue to be allowed on the Sinbad Overlook Road. Vehicular use would continue to be restricted to existing roads, ways, and trails by steep terrain and special features.

Harvest of forest products in the wilderness area would not be allowed except for harvest of pine nuts or noncommercial gathering of dead-and-down wood, if accomplished by other than mechanical means for use within the area. The remaining 15,124 acres would be open to woodland harvest. Increased harvest is not expected because of limited quantities of products, steep terrain, lack of access, and low demand.

Visual resources on the 34,376-acre wilderness would be managed in accordance with VRM Class I standards, which generally allow for only natural ecological change. The remaining 15,124 acres would be managed as Class II (5,420 acres) and Class IV (9,704), as outlined in the House Range RMP.

- Action Scenario

Although some mining claims are located in the designated portion of the WSA, BLM does not anticipate surface disturbance for this area. New mining claim location and mineral leasing would be precluded. Therefore, no mineral resource exploration or development would occur. No rangeland, wildlife habitat, or watershed improvement projects are planned following wilderness designation.

In the nondesignated portion of the WSA, 50 acres of surface disturbance would result from locatable mineral exploration and development as described for the No Action/No Wilderness Alternative.

The 15,124 acres located in the nondesignated portion of the WSA would be available to mining claim location. Development of the disseminated gold deposit would continue into the long term.

No disturbance from ORV activity is anticipated due to wilderness management and terrain constraints.

Primitive recreation use would increase over the current estimated use of 260 visitor days annually at a rate of 2 to 7 percent per year.

Recreational use involving vehicles would decline to about 20 percent of the total recreational use in the WSA.

Summary of Environmental Consequences

Table 1 summarizes the environmental consequences of the alternatives.

AFFECTED ENVIRONMENT

This section describes the overall environmental setting. This information allows for independent assessment by the public (as required by the CEQ guidelines) and provides a data base for the cumulative Statewide analysis found in Volume I, as well as the Environmental Consequences of Alternatives in this WSA analysis.

Unless otherwise indicated, information for this section was taken from BLM staff specialists, technical reports, and file documents including land use plans.

Wilderness Values

- Size

The Swasey Mountain WSA is approximately 17 miles long (north to south) and 12 miles wide and encompasses 49,500 acres of public land.

- Naturalness

Most of the WSA is natural. There are approximately 11 miles of vehicular ways on the lower east side elevations of the WSA that were determined to be substantially unnoticeable during the BLM Intensive Wilderness Inventory (USDI, BLM, 1980a). In February 1983 during interim management, mineral exploration activities were conducted in the WSA. Activities included two drill holes and about 3,000 feet of road. The total area affected was about 1 acre. All disturbance was rehabilitated to a substantially unnoticeable condition in 1984. Also during the interim, BLM installed a communication site on an 8 foot by 10 foot pad in the WSA. Equipment was removed and the site rehabilitated to a substantially unnoticeable condition in 1987. Refer to the Livestock section for rangeland developments. Essentially all of the 49,500 acres of the WSA meet the naturalness criteria of the Wilderness Act.

- Solitude

Opportunities to find solitude (i.e., a secluded spot away from others) within the WSA are influenced by size, topography, vegetation, and the absence of distracting sights and sounds.

The WSA is of sufficient size to allow visitors to be unaware of others in the vicinity. Rugged topography contributes to solitude in the central portion of the WSA; there is little opportunity for solitude on the lower benches of the east and west sides of the WSA. The highest points, Swasey Peak and Tatow Knob, offer outstanding views of Tule Valley, the Deep Creek Mountains, Wheeler Peak, etc., further contributing to the feeling of solitude.

Vegetation in the central part of the WSA contributes to solitude by screening visitors from each other. This vegetation includes pinyon, juniper, white pine, Douglas fir, limber pine, and occasional Ponderosa pine. The sparse shrubs found on the lower benches do not contribute to solitude.

The Swasey Mountain WSA is within the South Range of the USAF's Utah Test and Training Range. The South Range runs approximately north to south from the southern boundary of the Bonneville Salt Flats to the San Francisco Mountains and east to west from the Sheeprock Mountains to 17 miles within Nevada. This is one of the Nation's busiest military air spaces. There are 15,124 aircraft including all types of tactical fighters and bombers in the area. There are 100 to 150 (conservative estimate) aircraft flights per day over the South Range 6 days per week. Flights occur as low as 100 feet above the ground surface. Speeds are subsonic except in the very northern portion of the test range in the area around Ibapah, where supersonic speeds are also reached. Heaviest use areas are in the northern part of the test range which includes the Swasey Mountain WSA (Davies, 1985). Aircraft occasionally fly directly over the WSA, and these overflights can be a source of annoyance to visitors seeking solitude. Most of these overflights are not directly over the WSA and are subsonic in this area. Military flights are occasional off-site intrusions (sight and sound) that detract from, but generally do not eliminate, the overall opportunities for solitude.

When considered together, these factors indicate that the quality of solitude meets the Wilderness Act standards on 32,175 acres in the central part of the WSA, and does not meet the Wilderness Act standards on

Table 1
Summary of Environmental Consequences

Resource	Alternatives		
	No Action/No Wilderness	All Wilderness (49,500 Acres)	Partial Wilderness (34,376 Acres) (Proposed Action)
Impacts on Wilderness Values	Wilderness values would not be protected by wilderness designation and loss would occur as intrusions increase. In the foreseeable future, naturalness and opportunities for solitude and primitive recreation would be directly lost on 50 acres and indirectly reduced in quality on up to 12,375 acres due to development of locatable minerals. Special features would not be significantly affected. Continued vehicular use of 11 miles of ways would detract from opportunities for solitude and primitive recreation.	Wilderness values of naturalness and opportunities of solitude and primitive recreation would be preserved overall. In spite of wilderness designation, these values would be directly lost on 16 acres of the WSA, and their quality indirectly reduced on up to 7,425 acres due to mining in the foreseeble future. Special features would be preserved.	Wilderness values would be preserved overall in the designated area which is about 69 percent of the WSA. In the foreseeable future, naturalness and opportunities for solitude and primitive recreation would be directly lost on 50 acres and indirectly reduced in quality on up to 12,375 acres due to mining as with the No Action/No Wilderness Alternative. Special features would be preserved. Continued vehicular use of 3 miles of ways in the nondesignated area would detract from opportunities for solitude and primitive recreation.
Impacts on Mineral and Energy Exploration and Production	Mineral and energy exploration and development would not be adversely affected because the area would remain open to leasing and mining claim as at present.	Exploration and development opportunities for locatable minerals would be limited to claims valid at the time of designation. Opportunities for production of significant locatable minerals would be foregone. Loss of leasable and salable mineral production would not be significant because of their low probability of development.	This alternative would not adversely affect mineral and energy exploration and development in the WSA because the portion of the WSA with known locatable minerals would not be designated as wilderness.

Table 1 (Continued)
Summary of Environmental Consequences

Resource	Alternatives No Action/No Wilderness	All Wilderness (49,500 Acres)	Partial Wilderness (34,376 Acres) (Proposed Action)
Impacts on Wildlife Habitat and Populations	Less than 1 percent (50 acres) of the wildlife habitat would be directly affected. Populations would not be significantly reduced.	Direct disturbance of wildlife habitat would be reduced from 50 to 16 acres. Therefore, wildlife habitat and populations would benefit from wilderness designation.	Effects would be the same as for the No Action/No Wilderness Alternative because the projected developments would be in the nondesignated area.
Impacts on Recreational Use	Vehicular use would continue on 11 miles of ways at current levels. Initially, both vehicular and primitive recreational use would increase. Eventually, the quality and extent of primitive use may decline as vehicular use increases.	The WSA, including 11 miles of ways, would be closed to vehicular use. Opportunities for primitive recreational use would be preserved while opportunities for motorized recreation would be eliminated. The loss of ORV opportunities would not be significant on a regional basis. Overall, recreation use would initially decline and would be less than what would occur with the No Action/No Wilderness Alternative.	Primitive recreation opportunities would be preserved in the designated area. Vehicular use would continue on 3 miles of ways in the nondesignated area, but most of the WSA would not be available for vehicular access. The loss of ORV opportunities would not be significant on a regional basis. Overall, recreation use would initially decline, and would be less than what would occur with the No Action/No Wilderness Alternative.
Impacts on Economic Conditions	Local economic conditions would not be significantly affected. Local employment would be increased less than 1 percent by mineral development.	Employment losses would be less than 1 percent of the Millard County employment. Economic conditions would not be affected.	Effects would be the same as for the All Wilderness Alternative.

17,325 acres in the benchlands on the margin of the WSA.

- Primitive and Unconfined Recreation

Opportunities for primitive, unconfined recreation were evaluated by considering miles of hiking routes in relation to the WSA's size, the number of recreational opportunities present, and the quality of these opportunities.

As discussed in the Recreation section, this WSA was determined to have opportunities for 14 activities related to primitive, unconfined recreation. Rockhounding, horseback riding, backpacking, and scenic vistas were determined to be above average in quality.

The overall quality of the opportunities for primitive, unconfined recreation in the WSA meets the Wilderness Act standards on 32,175 acres in the central part of the WSA, and does not meet the standards on 17,325 acres in the benchlands on the margin of the WSA, due to the relative flatness and sparse vegetation.

- Special Features

During BLM's wilderness inventory several special features were identified including 77 wild horses, 1,100 acres with scattered bristlecone pine, 150 acres with fossils, and four limestone caves.

While wild horses are not particularly unique to the western United States, they are of high interest to the average visitor. The same is true of bristlecone pine (which also has scientific values). The trilobite specimens found in the Wheeler Shale are of particular interest since they are above average to excellent in quality. However, the best specimens are on adjacent State land. The caves described in the Geology section also enhance the recreational opportunities in the WSA.

The WSA has resource values that, although not identified as such during the wilderness inventory, could be considered special features. There are two animal species (bald eagle and peregrine falcon) listed as endangered or threatened. There are seven other special status animal species and one special status plant species located in the WSA (refer to the Affected Environment, Vegetation and Wildlife Including Special Status Species sections for additional information).

Also, approximately 25 percent of the WSA is rated Class A for scenic quality.

- Diversity

This WSA is in the Intermountain Sagebrush Province Ecoregion and has the PNV types of juniper-pinyon woodland and saltbrush-greasewood. Refer to the Vegetation Including Special Status Species section for more discussion on ecoregions and PNV types. The ecoregion and PNV types represented by this WSA compare with existing and other potential National Wilderness Preservation units in the Wilderness Values section of Volume I.

This WSA is within a 5-hour drive from three standard metropolitan statistical areas. These are Salt Lake City-Ogden, Utah; Provo-Orem, Utah; and Las Vegas, Nevada.

Air Quality

The WSA is located in a PSD Class II area under the provisions of the Clean Air Act as amended. Existing air quality is generally excellent throughout the year. The WSA is near the center of the Great Basin and in an area with the highest visual range (70+ miles) in the United States (EPA, 1979).

Geology and Topography

The Swasey Mountain WSA is located in the Basin and Range Physiographic Province. The WSA is in the north end of the House Range, a 50-mile-long block-faulted mountain range in western Utah.

The geologic formations of the WSA consists mostly of Cambrian rocks (Hintze, 1980). Massive limestones and interbedded shales predominate the lithology. Silicic alteration to jasperoid is found throughout the WSA below the Wheeler Shale Formation. A rhyolite dike (38-41 million years old, based on K-Ar dating) follows a north-south trend along the western edge of the north end of the WSA.

A complex structure of high angle block faults and thrust faults appear to control mineralized areas. Two major northwest-trending lineaments (mapped as the North Swasey and Trail Canyon Tear Faults) bisect the WSA. Extensive exploration and mapping has occurred in the northwest part of the WSA and just north of the WSA boundary (Dalton, 1987). Calcite veining, jasperoids, oxidized soils, diatremes, and brecciated areas have all been explora-

tion targets for mineralization and are found mostly north of the North Swasey Tear Fault, as mapped by Hintze (1981).

Elevations in the WSA average 5,500 feet in the lowest points and rise abruptly to over 9,600 feet along the prominent west face. The two features that dominate the WSA are Swasey Peak (the highest peak in the House Range) and Tatow Knob; both are prominent landmarks in Utah's West Desert. The central part of the WSA has very rugged topography; the western, northeastern, and southeastern part of the WSA are less steep.

The Antelope Springs Trilobite Beds occur on the southwest side of the WSA. According to a Smithsonian Institute report, this area is "the most outstanding field area for gathering fossils of the Cambrian geologic era in Utah and one of the most outstanding field areas in the United States." Most fossil collecting takes place on a State section outside the WSA, however, there is a potential for more specimens within the WSA.

There are at least four limestone caves in the WSA and three adjacent to it; more will undoubtedly be found as the area is more thoroughly explored.

Soils

Soils vary from light-colored alkaline loams and loamy sands of the desert floor and lower slopes to darker colored, gravelly, acid loams of the mountain tops. There are no serious erosion problems in the WSA. The WSA's erosion condition classification is slight on the entire 49,500 acres. Erosion condition class was determined using soil surface factors (refer to the Glossary). Assuming an annual soil loss of 0.6 cubic yards per acre from soils in a slight erosion condition, soil loss from erosion in this WSA would be approximately 29,700 cubic yards annually.

Vegetation Including Special Status Species

In general, vegetation of the WSA is typical of the other mountain ranges in the region with a variety of shrubs and grasses throughout the WSA and pinyon-juniper woodland, and other species at the higher elevations.

Existing vegetation types are shown in Table 2. There are approximately 1,100 acres of montane conifer vegetation type that includes Douglas fir, white fir, limber pine, Ponderosa pine, with bristlecone pine near ridgetops and interspersed communities of mountain mahogany. The only riparian vegetation is found in association with the five springs in the WSA and consists of less than 2 acres.

Table 2
Existing Vegetation Types

Existing Vegetation Type		Acres	Percent of WSA
Coniferous Forest/Aspen		1,100	2
Pinyon-juniper woodland		23,000	47
Sagebrush-horsebrush		18,470	37
Horsebrush-shadscale-halogeton		3,960	8
Shadscale-horsebrush-cheatgrass		2,970	6
	Total	49,500	100

Source: Foster, 1968; USDI, BLM, 1987c.

According to existing surveys, there are no threatened or endangered plant species within or near the boundaries of the WSA. One Category 2 candidate species, Cryptantha compacta is known to exist near, and could occur inside, the WSA (refer to Appendix 4 in Volume I for details).

The Swasey Mountain WSA is in the Intermountain Sagebrush Province Ecoregion as shown on the Bailey-Kuchler ecosystems map (USDI, USGS, 1978). The PNV types of the WSA are listed on Table 3.

Table 3
Potential Natural Vegetation Types

PNV Type		Acres	Percent of WSA
Juniper-pinyon woodland		14,850	30
Saltbrush-greasewood		34,650	70
	Total	49,500	100

Source: USDI, USGS, 1978.

Water Resources

Water resources consist of five springs in the WSA, plus two additional springs immediately adjacent to the WSA. There are no perennial streams. The springs are rated as beneficial use Class 4, and are managed for agricultural and livestock watering. Antelope Springs (near the WSA boundary) is suitable for human consumption. No water quality data are available for the other springs. The five springs in the WSA are closed to appropriation. Isolated seeps and intermittent washes may be open to appropriation (UDNRE, DWR, 1987).

Mineral and Energy Resources

Table 4 gives the mineral and energy resource summary rating for the WSA. Refer to Appendix 5 in Volume I for a description of the SAI rating system.

Table 4
Mineral and Energy Resource Rating Summary

Resource	Rating: Favorability[a]	Rating: Certainty[b]	Estimated Resource
Oil and Gas	f 2	c1	Less than 10 million barrels of oil; less than 60 billion cubic feet of gas
Uranium	f 2	c1	None
Geothermal	f 2	c1	Low temperature resource
Gold	f 2	c3	Less than 100,000 troy oz
Beryllium	f 2	c1	Less than 10 metric tons
Lead/Zinc	f 2	c3	Less than 50,000 metric tons
Tungsten	f 2	c2	Less than 500 metric tons
Silver/Copper/ Molybdenum	f 2	c2	Small deposits

Source: SAI, 1982; USDI, BLM, 1987d.

[a]Favorability of the WSA's geologic environment for a resource (f1 = lowest favorability or smallest size deposit; f4 = highest favorability or largest size deposit).

[b]The degree of certainty that the resource does or does not exist within the WSA (c1 = lowest and c4 = highest).

The WSA could contain small deposits of beryllium, lead, zinc, silver, molybdenum, and copper that are currently listed as strategic and critical materials (USDoD, 1988).

- Leasable Minerals

There are no known occurrences of leasable minerals in the WSA, nor are there any active drilling or exploration activities for leasable minerals.

- Oil and Gas

Oil and gas seismic surveys have taken place nearby. The geologic history of the WSA indicates that occurrence of large structural traps for oil and gas is unlikely; however, small traps may exist. The favorability for oil and gas deposits in the WSA is f2, with a very low degree of certainty (c1). Less than 10 million barrels of recoverable oil and 60 billion cubic feet of natural gas could occur within the WSA.

There are 15 post-FLPMA leases in the WSA covering approximately 22,602 acres.

Approximate acreages of present oil and gas leasing categories in the WSA are as follows: Category 1 (24,990 acres), Category 3 (6,800 acres), and Category 4 (17,710 acres).

- Geothermal

Limited geothermal exploration has occurred in the form of geochemical analysis and mapping. Overall favorability for geothermal resources is rated f2 with a very low degree of certainty (c1). Additional data are necessary to determine if commercial potential exists. Geothermal resources are most likely to occur in the northern portion of the WSA. The oil and gas category restrictions also apply to geothermal leasing under the House Range RMP (USDI, BLM, 1987c).

- Locatable Minerals

There are 177 mining claims in the WSA totaling approximately 3,540 acres. Most of these claims are located along the northern boundary of the WSA in two groups (or claim blocks). Each claim block also extends further north outside of the WSA. Exploration, sampling, and assaying have been actively ongoing for both claim blocks.

- Gold/Silver/Copper/Molybdenum

Evidence compiled to date indicates with a moderate degree of certainty (c3) that the geologic environment is favorable for small deposits of disseminated gold (f2, less than 100,000 troy oz contained metal).

Between the years 1978 and 1986, over 1,800 samples have been analyzed from both north of and from within the WSA. Fifty-eight drill holes (two within the WSA) have also been analyzed. Five different companies have been involved, and intensive mapping and sampling have shown favorable results. Originally identified as a potential molybdenum prospect (Climax type), the area has been recently targeted for gold. This is due to three factors: (1) Swasey Mountain lies within or close to two mineralogical trends (the east to west Deep Creek/Tintic trend [Hilpert and Roberts, 1964] and a southwest to northwest copper porphyry trend [Tooker and Johnson, 1980; USDI, USGS, 1985]); (2) the North Swasey area contains similar geologic and mineralogic conditions to the Drum Mine, an active mine located 15 miles east of the WSA. The Drum Mine contains a

moderate sized, disseminated gold deposit (USDI, BLM, 1987) with estimated reserves around 200,000 oz. Not only does the mineralized geology appear similar, but the analyses of the indicator elements for the Drum Mine deposit are also similar to those found in the North Swasey area (Dalton, 1987); (3) these indicator minerals, found in the North Swasey area, such as arsenic, mercury, antimony, gold, silver, boron, molybdenum, tungsten, fluorine, copper, lead, iron, zinc, and manganese have been successfully utilized to discover and develop many of the mines in the Basin and Range province discovered since 1980. Various anomalies of these indicator minerals occur within the WSA boundary (Dalton, 1987).

Estimated reserves were placed between 750 thousand and 1 million short tons of 0.04 oz per ton gold for reserves of up to 40,000 oz contained metal in the area north of the WSA (Dalton, 1987). Further drilling and sampling of the anomalies is needed to estimate the extent of reserves within the WSA. Preliminary indications suggest that anomalous amounts of the indicator elements described above have not been found south of the North Swasey Tear Fault as mapped by Hintze (1981).

Exploration targets for the sampling program to date have been jasperoids, contact breccias, iron and manganese stained areas, oxidized soils, and diatremes. The majority of the anomalies within the WSA are in T. 15 S., R. 13 W., secs. 6, 7, and 18; and T. 15 S., R. 14 W., secs. 1, 12, and 13; SLB&M.

Although not rated by SAI (1982), the above discussion indicates a favorable geologic environment for small deposits of silver, copper, and molybdenum (f2) with a moderate degree of certainty (c2). The original molybdenum intrusive target south of Sand Pass was actually intersected during later gold exploration (Dalton, 1987). This pluton lies at depth north of the WSA.

- Beryllium

The WSA is located within an area broadly favorable for beryllium deposits since Spor Mountain, an active beryllium mine, lies about 10 miles northeast of the WSA. Since it is not known whether the rhyolites within the WSA are similar to those at Spor Mountain, a very low degree of certainty (c1) has been assigned with a geologic favorability for small deposits (f2).

- Lead and Zinc

Geochemical sampling has verified the presence of lead and zinc within the WSA. A low certainty (c2) for a small deposit (f2) exists.

- Tungsten

As with lead and zinc above, the geologic environment is favorable for a small (f2) deposit within the WSA with a low degree of certainty (c2).

- Uranium

No known uranium exploration or production has occurred inside the WSA. The geologic favorability for uranium occurrence is rated (f1) with a very low degree of certainty (c1).

- Salable Minerals

Sand, gravel, cinders, pumice, quartzite, and limestone occur in the WSA. To date, no interest has been expressed in these resources due to more favorable deposits located outside the WSA.

Wildlife Including Special Status Species

There are approximately 50 species of mammals, 104 species of birds, 14 species of reptiles, and one amphibian species that inhabit the WSA at different times of the year. Although a great diversity exists, no one species could be described as dominant.

There are no Federally designated critical habitats in the WSA. The WSA is inhabited by mule deer. Areas within a 0.25 mile of springs and water sources are considered critical deer habitat. There are approximately 1,100 acres of high priority yearlong habitat for pronghorn antelope in the northwestern part of the WSA. An estimated 800 to 900 deer use the WSA during the winter and about 50 antelope inhabit the WSA year round. In addition, there are 1,900 acres of yearlong and 900 acres of winter habitat for chukar partridge. Chukars are found near water sources and winter ranges are on benchlands mainly on the western side of the WSA.

Two endangered species, bald eagle and peregrine falcon, and the golden eagle, a BLM sensitive species, inhabit the WSA. There are approximately 49,000

acres of crucial yearlong golden eagle habitat within the WSA. This indicates that the eagles nest somewhere in the WSA.

Six Category 2 candidate species could occur in the WSA. These are the ferruginous hawk, long-billed curlew, Swainson's hawk, western snowy plover, white-faced ibis, and the Swasey Spring pocket gopher. With exception of the Swasey Spring pocket gopher, these species are birds that frequent areas throughout the Great Basin and other parts of the western United States. Refer to Appendix 4 in Volume I for details. The Swasey Spring pocket gopher is known only from the vicinity of Swasey Spring.

Approximately 12,000 acres in the WSA are managed under the West Desert HMP (USDI, BLM, 1980c). There are no vegetation manipulation projects planned for wildlife. There are no existing or proposed developments for wildlife habitat in the WSA.

Forest Resources

There are about 1,100 acres of conifer forest in the WSA, but approximately 95 percent of this acreage is inaccessible. There has been no demonstrated demand due to the limited quantity of the reserve and economic constraints. There are approximately 23,000 acres of pinyon-juniper woodland with an estimated total volume of 82,370 cords of firewood, 19,720 juniper posts, and 20,000 lb of pine nuts annually. Only 1,500 acres (6.5 percent) of this woodland are accessible. Currently, about 250 cords of firewood, 50 to 100 juniper posts, and 200 lb of pine nuts are being harvested each year from the WSA.

Livestock and Wild Horses/Burros

Because of the rugged nature of the terrain, sheep and cattle grazing is concentrated on the lower benchlands and in the Sinbad area. Portions of four allotments used by seven operators involving both sheep and cattle are permitted for an estimated 1,321 AUMs in the WSA. This represents 9 percent of the AUMs for the allotments involved. Refer to Table 5 for specific allotment information.

No areas within the WSA have been identified for vegetation manipulation projects to benefit livestock. Existing livestock improvements in the WSA include five spring developments, 1.50 miles of fence, and 20 acres of seeding (completed in 1956).

The extent to which operators use existing vehicular ways to manage their livestock operations is estimated to be minimal. Permittees herd sheep by horseback and water is hauled along the boundary of the WSA. One sheep camp is regularly established on the northern border and two others are along the eastern boundary of the WSA in the Tatow allotment. Fences and springs are maintained on foot or horseback. Maintenance of the 20-acre seeding in the Sinbad area could require the use of heavy equipment.

Table 5
Livestock Grazing Use Data

Allotments	Total Acres	Acres in WSA	Total AUMs	Number of AUMs in WSA	Number and Kind of Livestock	Season of Use	Number of Operators
Antelope	72,102	18,685	4,055	385	38 Cattle 3,295 Sheep	05/19-09/30 11/01-04/30	1
Sand Pass	32,222	5,960	2,000	289	1,765 Sheep	05/19-09/30 11/01-04/30	1
Tatow	56,839	23,710	4,131	602	55 Cattle 3,4476 Sheep	05/01-09/30 11/01-04/30	1
Swasey Knoll	47,282	1,145	4,350	45	3,625 Sheep	05/01-09/30 11/01-04/30	1
Total	210,445	47,550	14,536	1,321			4

Sources: USDI, BLM, 1987c.

APHIS conducts predator control in the BLM grazing allotments that comprise the WSA. A total of 24 coyotes and one bobcat were taken in the allotments in and surrounding the WSA during 1986 and 1987 (USDA, APHIS, 1988). Sixteen of the coyotes were taken from aircraft, one by calling, and seven by trap. The bobcat was also taken by a trap. The WSA comprises between 2 and 40 percent of any one allotment. It is not known what proportion of the coyotes were actually taken within the WSA. There were no confirmed livestock losses for 1986 and 1987 in these allotments. An unrecorded number of losses were reported by livestock operators.

The Swasey Mountains, including portions within the WSA, are used by approximately 77 wild horses. Plans call for management of the herd to maintain a population of approximately 100 animals; thereafter, the intent is to control numbers by capture and removal of excess animals. No burros are known to inhabit the WSA.

Visual Resources

A wide variety of vegetation and topographic features make the Swasey Mountain visually attractive. Swasey Peak, Tatow Knob, and the sheer limestone cliffs along the west side are the most striking features. The east slopes are characterized by pinyon-juniper covered slopes, giving way to Douglas fir, white fir, and bristlecone pine on the steep slopes of Swasey Peak. There are numerous grey-and-tan limestone rock outcrops. The lower benchlands are characterized by low gray sagebrush, light tan soils, and subdued topography.

The BLM VRM System (refer to Appendix 7 in Volume I) was used to rate the WSA's visual characteristics as shown in Table 6 (terms are defined in the Glossary).

Cultural Resources

As of 1988, BLM Cultural Resources site maps indicate that there are 11 sites recorded in this WSA. Most are rockshelters reflecting Archaic, Fremont, and Shoshoni use of the area. The others are open sites that also reflect this use. The potential for finding other sites of these types is high. There may also be historical sites in the area that reflect mining and ranching activities that occurred in the WSA.

There are no National Register sites or nominees known in the WSA.

Table 6
Visual Resource Quality and Management Class

Element		Acres	Percent of WSA
Scenic Quality Class A		10,320	21
Scenic Quality Class B		27,690	56
Scenic Quality Class C		11,490	23
	Total	49,500	100
Management Class I		0	0
Management Class II		38,010	77
Management Class III		0	0
Management Class IV		11,490	23
	Total	49,500	100

Source: USDI, BLM, 1986

Recreation

Sixteen recreational opportunities were evaluated for their quality in this WSA. Fourteen opportunities are present in varying degrees. Four activities (backpacking, horseback riding, rockhounding, and scenic vistas) are of above average to excellent in quality. Six activities are average in quality, with the remaining activities rated fair or poor. A summary of selected recreational activities follows.

As discussed in the Geology section, the trilobite beds (mostly outside of the WSA) are of national significance. Approximately 210 visitor days a year are attributed to rock collecting.

The seven caves in the Swasey Mountain are known to spelunkers. Four of the caves are within the WSA. Descriptions of the caves are contained in several published reports. Cave exploration is above average in quality due to the remote and relatively undisturbed nature of the caves. No visitor use data are available for spelunking in the WSA. However, BLM recreation specialists estimate that there are approximately 190 visitor days attributed to Antelope Cave, immediately outside the WSA. Use inside the WSA is lower, estimated to be less than 50 visitor days per year.

Scenic vistas from the Swasey Mountain WSA are above average. There are views of Tule Valley, Deep Creek Mountains, Wheeler Peak, and numerous other ranges and valleys of western Utah.

Many individuals from Delta, Utah, and the surrounding small communities drive to the vicinity of Swasey Mountain for scenic sightseeing and collecting of firewood. The Sinbad Overlook road winds approximately 2.5 miles up the south and west slopes of the Swasey

Mountain. Sinbad Overlook offers a panoramic view of the Deep Creek, Fish Springs, Conger, and Confusion Mountain ranges. Eighty visitor days annually are attributed to collection of firewood and sightseeing along this road.

Dayhiking trips are possible by cross country routes up Swasey Mountain. Longer trips are possible by pack trail to Tatow Knob and Robbers Roost Cave. The presence of potable water at five springs enhances the recreational opportunities in the WSA.

Hunting in the Swasey Mountain is limited primarily to deer. Although the number of hunters is low, hunter success is high. Most of the hunting takes place from horseback along the higher canyon trails winding out along the ridgeline north of Sinbad Overlook. Some 40 individuals participate annually in deer hunting in this area, accounting for about 160 visitor days of use.

The majority of the WSA is too steep and rocky for vehicular use off the existing roads and trails; however, there are approximately 11 miles of vehicular ways. Most of the ORV use takes place on the jeep trails in Sawmill and North Canyons.

The total recreational use of the WSA is currently estimated by BLM to be 500 visitor days annually. Approximately 52 percent of the use is attributed to primitive activities (such as rock collecting and spelunking) and approximately 48 percent is attributed to recreational activities (such as hunting and sightseeing) that currently utilize vehicular access on existing ways. There is no ORV use attributed to use solely for ORV play activities.

The House Range RMP limits vehicles to existing roads and ways on 34,500 acres of the WSA, and leaves 15,000 acres open to ORV use.

Land Use Plans

The WSA is BLM-administered public land except for five State sections (3077.72 acres). There are no private in-holdings, private subsurface rights, or rights-of-way inside the WSA.

The WSA is in Millard County, Utah. The Millard County Master Plan (Paul Nelson Associates, Inc., 1981) does not specifically address wilderness. Millard County believes that Federal lands in the county should, generally, be utilized to their greatest economic potential under a multiple-use concept. The Millard County Commission has endorsed the Consolidated Local Government Response to Wilderness (Utah Counties, 1986) that opposes wilderness designation for the Swasey Mountain WSA.

Of the six State sections (3,077.72 acres) inside the WSA, four (2,560 acres) are under grazing permit; one (640 acres) is under both grazing permit and oil, gas, and hydrocarbon leases; and one (517.72 acres) is leased only for oil, gas, and hydrocarbons. Grazing is the only activity on these lands at present (UDNRE, UDSLF, 1988).

The current policy of the State is to reserve its position regarding exchange of in-held State lands and to maximize economic returns for the State school fund. In 1986, the Utah State Legislature passed S.C.R. No. 1 that opposes wilderness designation in Utah and urges that State lands not be exchanged out of wilderness.

The current BLM planning document for the Swasey Mountain WSA is the House Range RMP (USDI, BLM, 1987c). Wilderness designation is part of the BLM multiple-use concept. Wilderness is not addressed in the House Range RMP. However, the RMP is linked to the Statewide Wilderness EIS through inclusion of the RMP decisions as the No Action/No Wilderness Alternative.

The House Range RMP designates the Swasey Mountain area as a SRMA where vehicles are limited to existing roads, ways, and trails on 34,500 acres of the WSA.

The Swasey Mountains WSA is in the South Range of the USAF's Utah Test and Training Range. The USAF position is that low level military overflights of the Utah Test and Training Range, including the Swasey Mountain WSA, would continue with or without wilderness designation (USAF, 1986).

Approximately 50 acres of the WSA are in a BLM public water reserve (PWR) that segregates the land from public land laws and nonmetalliferous mining.

Socioeconomics

- Demographics

The nearest population center to Swasey Mountain is Delta, Utah, in Millard County approximately 35 miles west of the WSA.

From 1970 to 1980, the population of Millard County grew by approximately 28.4 percent to 9,050. A major portion of the Millard County population lives in Delta (1,930) and Fillmore (3,083). Table 7 presents baseline and projected population data for Millard County. It is estimated that between 1980 and 1987, populations increased to about 10,415. Population projections for the county indicate that the number of people living in Millard County in the year 2010 will be about 12,900 for about a 43 percent increase over 1980 levels (Utah Office of Planning and Budget, 1987).

Table 7
Baseline and Projected Population and Employment Growth
Millard County

	1980	1990	2000	2010
Population	9,050	11,000	11,600	12,900
Employment	3,645	5,500	6,000	6,700

Source: Utah Office of Planning and Budget, 1987.

• Employment

Table 7 shows the baseline and projected total employment for Millard County to the year 2010. The government sector (Federal, State, and local) is the most important in terms of employment. Farm employment makes up about 26 percent of the total employment in the county.

The Intermountain Power Project contributes significantly to employment in the county (Paul Nelson and Associates, 1983-1986), and mining has been declining in recent years.

Millard County is part of the Central MCD. Table 8 shows the baseline (1980) and projected employment by source for the MCD to the year 2010. In 1980 the leading employment sectors for the Central MCD were government (21 percent), agriculture (20 percent) and trade (14 percent). Mining provided approximately 4 percent of the direct employment in the MCD. It is projected that by the year 2010 employment in the MCD will increase by approximately 58 percent. Trade will increase to 17 percent and services to 12 percent of the total. Government will decline to 17 percent, agriculture to 11 percent, and mining to 3 percent of the total.

• Sales and Revenues

Economic-related activities in the WSA include mineral exploration, livestock production, woodland production, and recreation. Table 9 summarizes local sales and Federal revenues from the WSA. Appendix 9 in Volume I identifies the multipliers used to estimate sales and revenues.

Table 8
Central Multi-County District
Employment[a]

	1980	1990	2000	2010
Agriculture	3,649	3,500	3,600	3,800
Mining	706	700	800	900
Construction	822	1,400	2,200	2,200
Manufacturing	2,047	1,900	2,200	2,600
Transportation, Utilities	589	1,300	1,400	1,500
Trade	2,604	3,400	4,000	4,900
Finance, Insurance, Real Estate	347	400	500	600
Services	1,439	2,300	2,900	3,500
Government	3,919	4,100	4,100	4,900
Nonfarm Proprietors	2,278	2,800	3,300	4,100
Totals	18,400	21,800	25,000	29,000

Source: Utah Office of Planning and Budget, 1987.

[a]Includes Juab, Millard, Piute, Sanpete, Sevier, and Wayne Counties.

The WSA has 177 mining claims. Regulations require a minimum of $100 annual expenditure per claim for labor and improvements, an undetermined part of which is spent in the local economy. Not all claims are current in assessment work. Some geophysical exploration which has been conducted in the WSA and has generated some temporary local employment and income.

Table 9
Sales and Revenues

Source	Estimated Annual Local Sales[a]	Estimated Annual Federal Revenues
Oil and Gas Leases	None	$45,204
Mining Claim Assessment	$17,700	0
Livestock Grazing	26,420	$2,034
Woodland Products	19,450[b]	1,250
Recreational Use	2,050	
Total	$65,620	$48,488

Sources: USDI, BLM, 1982a; Appendix 9 in Volume I.

[a]Local sales represent money potentially spent. They do not account for the total income that would be generated by these expenditures.

[b]This amount is not equivalent to sales but is the value of forest products to those who gather them.

Seven livestock operators have a total grazing privilege of 1,321 AUMs within the WSA. If all this forage were utilized, it would account for $26,420 of

livestock sales including $6,605 of ranchers' returns to labor and investment.

Some woodland products are harvested from the WSA; however, the harvests have been small and are insignificant to the local economy and only of minor significance to those involved in the harvest. Firewood, juniper post, and pinyon nut harvest yield products valued at up to $19,450; however, because of the number of individuals involved, the value is not great per individual.

The actual amount of income generated locally from recreational use in the WSA is unknown. However, an approximate range of expenditures can be deduced (Dalton 1982). This study indicates that the Statewide average local expenditures per recreational visitor day for all types of recreation in Utah are approximately $4.10. The recreational use for Swasey Mountain WSA is estimated as about 500 visitor days per year. Therefore, there are about $2,050 in local expenditures for recreational use of the WSA.

The WSA generates Federal revenues from mineral leases, livestock, woodland products, and recreation sources (refer to Table 9).

Oil and gas leases in the WSA cover approximately 22,602 acres. At $2 per acre, lease rental fees generate up to $45,204 of Federal revenues annually. Half of these monies are allocated to the State, which then reallocates these revenues to various funds, the majority of which are related to energy development and mitigation of local impacts of energy and mineral development.

Average actual livestock use and, therefore, revenues generated from grazing in the WSA are unknown; however, the permittees in the WSA can use up to 1,321 AUMs per year. Based on a $1.54 per AUM grazing fee, the WSA can potentially generate $2,034 of grazing fee Federal revenues annually, 50 percent of which would be allocated back to the local BLM District for the construction of rangeland improvements.

Harvest of fuelwood, fence posts, and pine nuts from the WSA generates up to an estimated $1,250 of Federal revenues annually.

ENVIRONMENTAL CONSEQUENCES OF ALTERNATIVES

This section describes the environmental consequences of implementing the alternatives. The analysis is based on the BLM management actions and anticipated activities presented in the Introduction to Volume II and the Description of the Alternatives for the Swasey Mountain WSA.

No Action/No Wilderness Alternative

- Impacts on Wilderness Values

Because the WSA would not be designated wilderness with this alternative, the identified wilderness values would not receive the degree of protection afforded by application of the Wilderness Management Policy (BLM Manual 8560). Wilderness characteristics in the WSA would be protected by limitations placed on potential surface-disturbing activities (i.e., VRM Class II on 38,010 acres, management under oil and gas leasing Category 4 on 11,490 acres, and ORV limitations on 34,500 acres).

Disturbance of approximately 50 acres from mineral exploration and development of an access road in the northern portion of the WSA is likely and would result in a direct loss of naturalness, solitude, and outstanding opportunities for primitive, unconfined recreation in the disturbed areas. Special features include 77 wild horses, bristlecone pine, 300 acres with fossils, and four caves. The special status animal and plant species, and Class A scenery would not be affected. This is because only 0.1 percent of the WSA would be directly disturbed, and in most cases, disturbance would be located in places where there are no special features.

The visual and audible disturbance from mineral development would reduce opportunities for solitude and primitive recreation not only on directly disturbed areas but also indirectly on adjacent portions of the WSA. As much as 25 percent (12,375 acres) of the WSA would be so affected during the period of activity in the foreseeable future.

The amount of long-term disturbance that would occur on both Federal lands and the five sections of the State in-holdings and, therefore, the affect on wilderness values over the long term is not accurately known. Loss of wilderness values would occur as intrusions increase.

Eleven miles of ways currently receiving light use would remain open to ORV travel. As these and possibly future roads in the area are used, opportunities for primitive recreation and solitude would diminish.

Overflights by military aircraft would continue to be an occasional annoyance that would detract from the opportunity for solitude and primitive recreation in the WSA.

Conclusion: Wilderness values would not be protected by wilderness designation and loss would occur as intrusions increase. In the foreseeable future, naturalness and opportunities for solitude and primitive recreation would be directly lost on 50 acres and would be indirectly reduced in quality on up to 12,375 acres of the WSA. Special features would not be significantly affected.

- Impacts on Mineral and Energy Exploration and Production

The WSA would remain open to exploration and development of mineral and energy resources without consideration of wilderness values. Therefore, mineral and energy resources would not be affected by the No Action/No Wilderness Alternative.

Conclusion: Implementation of the No Action/No Wilderness Alternative would not adversely affect mineral exploration or production.

- Impacts on Wildlife Habitat and Populations Including Special Status Species

With this alternative, wildlife habitat and populations would be affected by an estimated 50 acres (less than 1 percent of the WSA) of surface disturbance. In addition, mineral and energy development and exploration would disrupt wildlife for the duration of these activities, which are expected to continue into the long term. Deer range, high priority yearlong habitat for pronghorn antelope, yearlong and winter habitat for chukar partridge, and portions of the crucial yearlong golden eagle range would be disturbed. Because the disturbance would be small, displacement of animals would not lead to measurable decreases in populations.

Two endangered species that inhabit the WSA, bald eagle and peregrine falcon, and six other special status bird species, including the golden eagle, would avoid the area of disturbance. The Swasey Spring pocket gopher is known only from the vicinity of Swasey Spring and would not be in the disturbed areas. When considering the wildlife in the WSA as a whole and the amount of potential disturbance of 50 acres (less than 1 percent of the WSA), impacts to wildlife are not expected to be significant.

Before authorizing surface-disturbing activities, BLM would conduct site-specific clearances of the potentially disturbed areas and would consult with FWS as necessary (refer to Appendix 4 in Volume I). If threatened or endangered species could be affected, BLM would initiate consultation with the FWS under provisions of the Endangered Species Act and appropriate mitigating measures would be applied. Because necessary measures would be taken to protect these species, it is concluded that the viability of populations of threatened, endangered, or other special status animal species would not be affected with the No Action/ No Wilderness Alternative.

Conclusion: Less than 1 percent of the wildlife habitat in the WSA would be disturbed and wildlife populations would not be significantly reduced. Special status animal species would not be significantly affected.

- Impacts on Recreational Use

The future trends in recreational use of the WSA are unknown. However, based on a review of several projections (UDNRE, ORA, 1980; UDNRE, DPR, 1985; Utah Office of Planning and Budget, 1984; Jungst, 1978; Hof and Kaiser, 1981; and Cordell and Hendee, 1982) it is estimated that outdoor recreation in Utah will increase at between 2 to 7 percent per year in the foreseeable future. At this rate, overall recreational use is expected to increase from 500 current visitor days per year to between 940 and 4,400 visitor days per year. Assuming that the 2 to 7 percent increase would be uniform among all recreation uses in the WSA, primitive recreational use would increase from the estimated current use of 260 visitor days per year to between 490 and 2,300 days per year by the year 2020. Likewise, recreational activities utilizing vehicular access (hunting, sightseeing, etc.) would increase from 240 visitor days per year to between 450 and 2,100 visitor days. Eventually, primitive recreational use could decline as vehicular use increases.

Conclusion: Over the foreseeable future, both primitive recreation and recreation using vehicular access would increase. Eventually, primitive recreational use could decline as vehicular use on roads and ways increases.

• Impacts on Economic Conditions

With this alternative, no substantial changes in existing patterns and trends of population, employment, and local income. Distributions are expected as a result of activities in the WSA. The Utah Office of Planning and Budget (1987) projects that agriculture, mining, and manufacturing in these counties would not expand greatly beyond their current size, while the retail trade, construction, services, and transportation sectors would continue to grow at a stable rate through the year 2010. Mineral activity associated with potential new and existing claims in the WSA could have a minor beneficial impact on the local economy.

Increases in mineral development in the Swasey Mountain WSA would employ about 20 persons at one time. Employment of 20 persons would increase total employment of Millard County by much less than 1 percent. The affect would even be less as population and employment increases in the future.

There would not be a loss of local employment or income as a result of this alternative. The existing ability to explore and develop mineral resources would remain as at present.

There would be no livestock-related economic losses because the existing grazing use (1,321 AUMs) and ability to maintain, replace, and build new range improvements would remain as at present. Forage use in the WSA would continue to produce $26,420 annually in livestock sales.

Due to changes in recreation, use related annual local expenditures attributable to the WSA could increase from $2,050 to $28,040 over the foreseeable future.

Existing leases on 22,602 acres and future leasing on 31,790 acres could bring $2 per acre per year in Federal leasing revenues in addition to possible royalties from lease production. Half of these monies would be allocated to the State, a portion of which could reach the local economy. However, because of the low probability of oil and gas production, it is unlikely that lease revenues would continue over the long term.

Collection of livestock grazing fees ($2,034 per year) would continue. About 50 percent of the revenues would be returned to the local BLM office for use in range improvement projects.

Conclusion: Present economic conditions and trends would not be affected over the foreseeable future. Mineral production would increase local employment by less than 1 percent.

All Wilderness Alternative (49,500 Acres)

• Impacts on Wilderness Values

Designation and management of all 49,500 acres as wilderness would contribute to the preservation of the wilderness values in the Swasey Mountain WSA, through such management actions as closing the entire area to mineral leasing and mining claim location and to ORV use, and managing the entire area as VRM Class I.

Solitude would be protected on approximately 32,175 acres that meet and 17,324 acres that do not meet the standards for outstanding solitude. Naturalness would be protected on all 49,500 acres, and primitive and unconfined recreation would be protected on 32,175 acres that meet and 17,325 acres that do not meet the standards for outstanding opportunities. The special features in the WSA; including 77 wild horses, 1,100 acres with bristlecone pine, 150 acres with fossils, 4 caves, special status plant and animal species, and high quality scenery; would also be protected.

Although protected, complete preservation of wilderness values would not be assured because of the existence of valid existing rights. In the foreseeable future, disturbance of up to 16 acres is anticipated from development of valid mining claims including an access road to a State section (T. 15 S., R. 13 W., sec. 16). As with the No Action/No Wilderness Alternative, this disturbance would occur in the northern portion of the WSA. Mitigation to protect wilderness values would be considered during mining claim development, but road construction and use of motorized equipment would be allowed if there are no reasonable alternatives. Wilderness values of naturalness and opportunities for solitude and primitive recreation would be lost on the directly disturbed areas. The same types of wilderness values would be reduced indirectly on adjacent portions of the WSA until activities and noise cease and the disturbed areas are reclaimed. As much as 15 percent (7,425 acres) of the WSA would be indirectly affected by noise and visual intrusion over the foreseeable future and into the long term. Special features would be preserved because only 0.03 percent (16 acres) of the WSA would be directly disturbed, and in most cases disturbance

would be in places where there are no special features.

Development of State sections other than section 16 is not projected in the foreseeable future. The degree of development on State lands inside the WSA boundaries that would occur over the long term and, therefore, the long-term affect on wilderness values, is not accurately known. Wilderness management would minimize the potential for long-term loss of wilderness values.

Closure of 11 miles of vehicular ways to ORV use would improve opportunities for solitude and primitive recreation.

Overflights by military aircraft would continue to be an occasional annoyance that would detract from the opportunity for solitude in the WSA.

Conclusion: Wilderness values would be preserved overall. In spite of wilderness designation, naturalness and opportunities for solitude and primitive recreation would be directly lost in the foreseeable future on 16 acres and would be indirectly reduced on up to 7,425 acres due to valid existing rights.

- Impacts on Mineral and Energy Exploration and Production

  - Leasable Minerals

    Approximately 22,602 acres of post-FLPMA oil and gas leases are in the WSA. However, no exploration or development of oil and gas is presently occurring within the WSA. There are no known occurrences of leasable minerals in the WSA. Potential for the occurrence of oil, gas, and geothermal resources is low.

    Existing leases could be developed subject to the stipulations issued at the time of leasing. It is unlikely that existing leases would be developed or a showing of commercial quantities made prior to their expiration dates, and expired leases will not be reissued. Even without wilderness designation, potential lease acreage would be reduced to 31,790 acres to meet leasing category restrictions.

    The potential for geothermal development is low even without wilderness designation. Therefore, potential losses would not be significant.

  - Locatable Minerals

    There are 177 mining claims (approximately 3,540 acres) within the WSA. Less than 50,000 metric tons of lead/zinc and up to 10 metric tons of beryllium that are recoverable could occur within the WSA. Development work, extraction, and patenting would be allowed to continue on valid claims after wilderness designation under unnecessary or undue degradation guidelines, but with wilderness considerations.

    In the short term, development and production of less than 100,000 troy oz disseminated gold on the north end of the WSA would be forgone. An unknown portion of the gold could be extracted from valid claims following wilderness designation.

    Potentially recoverable minerals not within valid mining claims filed prior to designation could not be recovered in either the short term or long term. Therefore, production of unknown amounts of minerals would be foregone.

  - Salable Minerals

    Salable minerals; including sand, gravel, cinders, pumice, quartzite, and limestone; occur in the WSA. No interest has been expressed in developing these resources because more favorable deposits are located elsewhere in the State. No short-term or long-term loss of salable mineral production is projected for this WSA.

Conclusion: Opportunities for production of significant locatable minerals would be foregone. Loss of potential leasable and salable minerals production would not be significant.

- Impacts on Wildlife Habitat and Populations Including Special Status Species

With this alternative, up to 16 acres (less than 1 percent of the WSA) of wildlife habitat, including crucial yearlong golden eagle habitat, could be subject to surface-disturbing activities associated with mineral exploration and development. However, because wilderness designation would protect the natural condition of almost all of the WSA and direct disturbance would be reduced by 34 acres as compared to the No Action/No Wilderness Alternative, wildlife including threatened, endangered, and other special status species would generally benefit from this alternative.

The presence of bald eagle, peregrine falcon, and golden eagle would remain the same in much of the WSA, except on those 16 acres of mineral disturbance where these species would leave the area during the period of activity.

Measures to protect these species from mineral exploration and development would be the same as described in the Wildlife Including Special Status Species section of the No Action/No Wilderness Alternative and the viability of populations would be preserved.

Conclusion: Wildlife habitats and populations would be protected by wilderness designation. No significant impacts would occur to special status species.

- Impacts on Recreational Use

Recreational use of the WSA is expected to increase about 2 to 7 percent per year over the foreseeable future. Management provided through a Wilderness Management Plan would control increases in future recreation use, and the quality of the primitive recreation experience would not be negatively affected by the increase in primitive use. The 2,100 visitor days of vehicular hunting and sightseeing in the WSA that could occur without designation would be eliminated from the WSA. Access to the high country would continue to be allowed on the Sinbad Overlook road, however, restrictions and access on the 11 miles of vehicular ways would reduce the number of visitor days related to hunting and sightseeing. Overall visitation to the WSA would probably be less than with the No Action/No Wilderness Alternative.

Conclusion: Opportunities for primitive recreational use would be increased by this alternative, and opportunities for motorized recreational use would be foregone. Overall visitation to the WSA would decline initially. The loss of ORV opportunity would have little affect regionally.

- Impacts on Economic Conditions

Overall there would not be significant changes in present or short-term future trends of population, employment, and local income distribution. Because of restrictions placed on the use of resources under wilderness designation, there would be some loss in local potential long-term employment and Federal revenues currently provided by resource uses in the WSA (refer to Table 9), as well as loss of potential increases in income and Federal revenues that could occur under the No Action/No Wilderness Alternative.

Valid existing mining claims could be developed, but designation would preclude new leases and claims from being established in the WSA. Precluding exploration and development of minerals would not alter existing economic conditions, but could limit future economic growth potential. Over the short term, there would be little difference as compared to the No Action/No Wilderness Alternative because valid claims could be developed and because the number of jobs provided at one time by mining operations would be small (20 jobs).

There would be a potential loss of $63,580 annually in Federal revenues from the 31,790 acres that could be leased without designation. In addition to rental fees, any potential royalties from production could also be forgone. Even without wilderness designation it is unlikely that this acreage would be leased on a long-term basis because of low probability of oil and gas production.

Livestock use and ranchers' income would continue essentially as at present with $26,420 of livestock sales attributed to the AUMs within the Swasey Mountain WSA.

Recreational expenditures related to primitive recreation would increase but would be small ($4.10 per visitor days). Total would be less than with the No Action/No Wilderness Alternative recreational related expenditures due to the WSA.

Wilderness designation would eliminate most woodland product harvesting with related local values and Federal revenues. Present harvest from the WSA annually generates about $19,450 in woodland product values and $1,250 in Federal revenues.

Conclusion: Over the foreseeable future, wilderness designation would not affect economic conditions. Employment in Millard County would be reduced by less than 1 percent.

Partial Wilderness Alternative (Proposed Action) (34,376 Acres)

- Impacts on Wilderness Values

Wilderness designation of 34,376 acres would contribute to the preservation of the area's wilderness characteristics. With this alternative, the potential

for surface-disturbing activities that could impair wilderness values would be reduced in the designated area through management under VRM Class I (which generally allows for only natural ecological change), through ORV closure (8 miles of ways), and through closure of the entire area to future mineral leasing and location.

All of the area that would be designated meets the Wilderness Act criteria for naturalness. All 32,175 acres that meet the Wilderness Act criteria for outstanding opportunities for solitude and primitive recreation and special features (including 77 wild horses, 1,100 acres with bristlecone pine, 110 acres with fossils, and four caves, Class A scenery, and most or all special status species habitat) would be in the designated portion.

Mineral-related surface disturbance anticipated in the foreseeable future in the nondesignated portion of the WSA would be expected to result in a direct loss of naturalness and opportunities for solitude and primitive recreation on up to 50 acres and additional reduction of these wilderness values from sights and sounds on up to 25 percent (12,375 acres) of the WSA. The likely disturbance and loss of wilderness values with this alternative is similar to the No Action/No Wilderness Alternative. The nondesignated area does not meet the Wilderness Act criteria for outstanding opportunities for solitude or primitive recreation and contains approximately 3 miles of ways.

The potential for long-term development of existing mining claims on Federal land or of State in-holdings, and, therefore, the potential loss of wilderness values over the long term is not known. It would be less than would occur with the No Action/No Wilderness Alternative, due to application of mitigating measures to protect wilderness values subject to valid existing rights.

Vehicular use of the ways in the nondesignated area would continue to detract from opportunities for solitude and primitive recreation.

Overflights by military aircraft would continue to be an occasional annoyance that would detract from opportunities for solitude and primitive recreation in the WSA.

Conclusion: Wilderness values would be preserved in the designated area which is about 69 percent of the WSA. Wilderness values of naturalness and opportunities for solitude and primitive recreation would be directly lost in the foreseeable future in the nondesignated area on 50 acres and would be indirectly reduced in quality on up to 12,375 acres.

- Impacts on Mineral and Energy Exploration and Production
  - Leasable Minerals

Post-FLPMA oil and gas leases presently cover approximately 18,722 acres of the area that would be designated. No geothermal leases are in the area. New oil, gas, and geothermal leases would not be issued on this land and existing leases would not be renewed.

Existing post-FLPMA oil and gas leases located in the designated portion of the WSA could be developed subject to the nonimpairment stipulations issued at the time of leasing; however, with wilderness designation these stipulations would, in practicality, prevent any substantial development. As a result of these stipulations and the probable small size of the deposits, it is estimated that the existing leases would not be developed or a showing of commercial quantities made prior to their expiration date. Expired leases would not be reissued. Due to the small size of the potential deposits, the low certainty that they exist, and the low likelihood of development, the loss of leasable mineral production would not be significant.

In the 15,124-acre area that would not be designated wilderness, post-FLMPA oil and gas leases cover approximately 3,880 acres. Oil and gas leasing categories would be Category 1 (13,480 acres), Category 3 (324 acres), and Category 4 (1,320 acres). Impacts in this area would be essentially the same as described for the No Action/No Wilderness Alternative.

- Locatable Minerals

Approximately 13 mining claims (260 acres) are within the area that would be designated wilderness. Development work, extraction, and patenting could continue on valid claims after wilderness designation under unnecessary or undue degradation guidelines. After designation, all other lands (including claims not determined valid) would be closed to prospecting and development (USDI, BLM, 1981b).

Because these locatable minerals are not being recovered at present within the portion of the WSA that would be designated, and economic considerations (i.e., transportation, low potential, etc.) are unfavorable, it is assumed that exploration or development would not occur, even without wilderness designation. Therefore, this alternative would not prevent recovery of significant amounts of locatable minerals.

The Partial Wilderness Alternative would not designate the portion of the WSA with known locatable minerals.

In the nondesignated portion of the WSA, less than 100,000 troy oz of gold would be produced from disseminated gold deposits. Gold would also be produced from a much larger area located outside of the WSA. In the long term, mining operations could continue to produce disseminated gold and other locatable minerals from the north end of the WSA. The degree of long-term development is unknown.

- Salable Minerals

Salable minerals, including sand, gravel, cinders, pumice, quartzite, and limestone; occur in the WSA. To date, no interest has been expressed in developing these resources due to more favorable deposits located elsewhere in the State. No loss of production of the salable mineral resource would result.

Conclusion: Implementation of the Partial Wilderness Alternative would not adversely affect mineral and energy resource exploration and production in the Swasey Mountain WSA.

- Impacts on Wildlife Habitat and Populations Including Special Status Species

The disturbance of up to 50 acres (less than 1 percent) in the nondesignated portion of the WSA from mineral and energy exploration and development could affect wildlife habitat. Most of the antelope and chukar habitat would be in the nondesignated area and impacts to wildlife habitat and populations would be the same as those described for the No Action/No Wilderness Alternative. Impacts in the area that would be designated would be the same as those described for the All Wilderness Alternative.

Conclusion: Less than 1 percent (50 acres) of the wildlife habitat in the WSA would be disturbed and wildlife populations would not be significantly reduced. No impacts would occur to special status species.

- Impacts on Recreational Use

Approximately 8 miles of ways used for vehicular access for sightseeing and hunting within the WSA would be closed to vehicular use.

Because the potential for mineral production is low and wilderness designation would reduce the potential for surface disturbance, the quality of the primitive recreational experience would likely be preserved throughout the designated portion of the area.

The quality of a user's primitive recreational experience would be reduced by surface-disturbing activities on 50 acres. However, roads and ways created for mineral and energy exploration and development would improve access into the nondesignated area for nonprimitive recreation.

Although ORV use would be eliminated in the designated area, the loss would have little affect on ORV use in the region.

Overall, future recreational use would be less than projected for the No Action/No Wilderness Alternative.

Conclusion: Primitive recreational opportunities would be preserved and use of vehicles eliminated in the designated portion. Overall, recreational use in the WSA would probably decline initially. The loss of ORV opportunity would have little affect regionally.

- Impacts on Economic Conditions

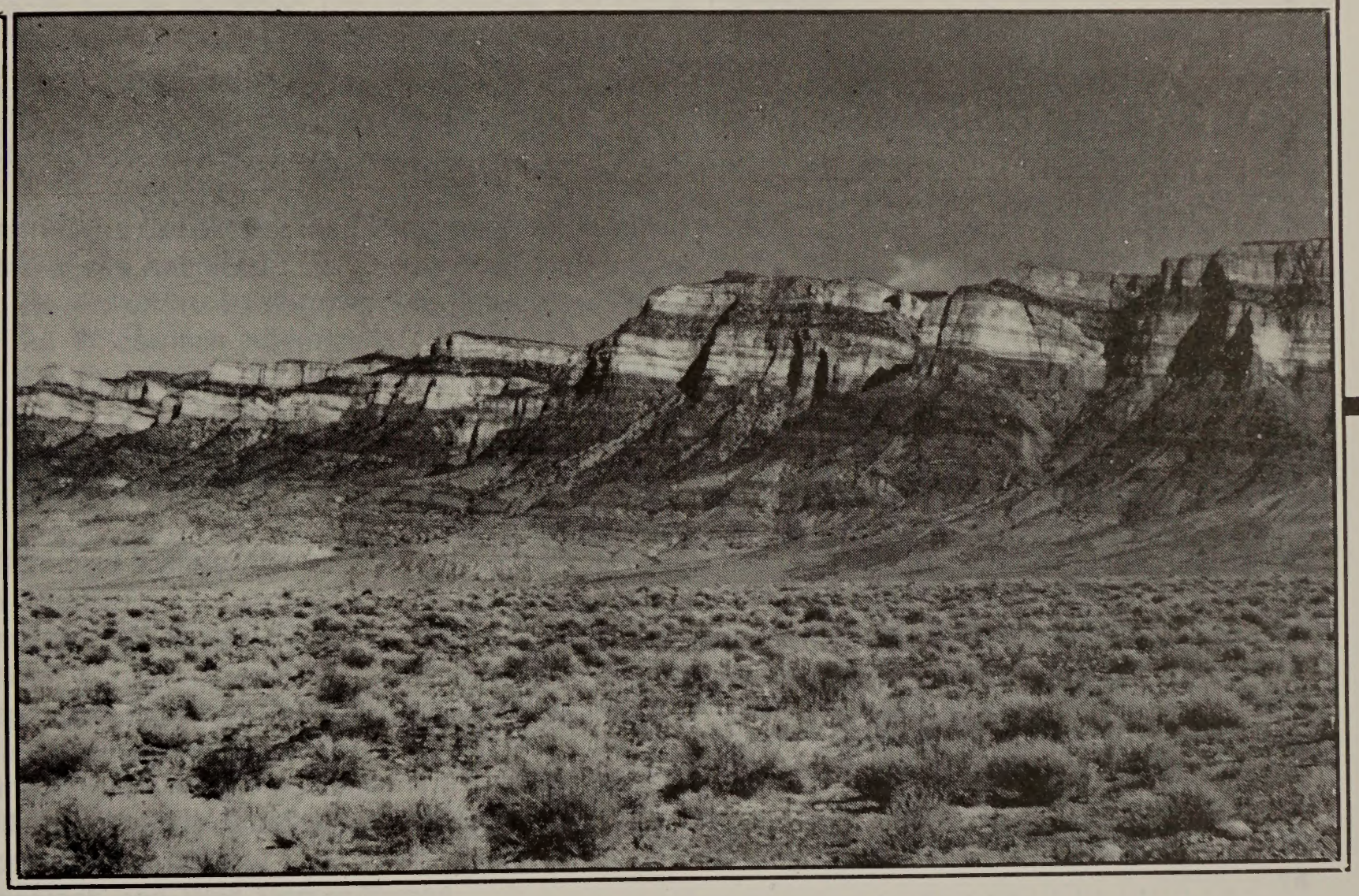
Partial wilderness designation (57,384 acres) in the Swasey Mountain WSA is not expected to result in any changes in existing patterns and trends of population, employment, and local income distributions. The major difference in this alternative and the All Wilderness Alternative would be in mineral-related sales and revenues. This alternative would avoid known high mineral value areas and 164 of the 177 existing claims. Therefore, with this alternative, designation would be less likely to conflict with the recovery of mineral resources within the WSA. As with the All Wilderness Alternative, precluding exploration and development of all presently unclaimed areas within

the designated portion of the WSA would not alter existing economic conditions or conditions anticipated over the foreseeable future. It is anticipated that over the foreseeable future up to 20 persons would be employed in mining activities in the WSA with or without partial wilderness designation. This is less than 1 percent of the present employment of Millard County. It would be even smaller percentage of the future work force in the county. There would be a potential loss of $35,927 annually in Federal revenues from the 17,986 acres of oil and gas leasing Category 1 and 3 lands in the designated area that, without designation, could be leased in the future. Even without wilderness designation it is unlikely that this acreage would be leased on a long-term basis because of low probability of oil and gas production.

Total recreation related expenditures would be slightly less than with the No Action/No Wilderness Alternative as recreation related to vehicle access on 8 miles of ways would be eliminated.

Conclusion: Over the foreseeable future partial wilderness designation of the Swasey Mountain WSA would not significantly affect local economic conditions.

Howell Peak WSA



HOWELL PEAK WSA

TABLE OF CONTENTS

INTRODUCTION 1

General Description of the Area 1
Changes for the Final EIS 1
Specific Issues Identified Through Scoping and Public Comment 1
Issues Considered But Not Analyzed in Detail 1
Issues Analyzed in Detail 3

DESCRIPTION OF THE ALTERNATIVES 3

Alternatives Considered and Eliminated from Detailed Study 3
Alternatives Analyzed 3
No Action/No Wilderness Alternative 3
All Wilderness Alternative 5
Partial Wilderness Alternative (Proposed Action) 7
Summary of Environmental Consequences 9

AFFECTED ENVIRONMENT 9

Wilderness Values 9
Air Quality 11
Geology and Topography 11
Soils 11
Vegetation Including Special Status Species 11
Water Resources 12
Mineral and Energy Resources 12
Wildlife Including Special Status Species 14
Forest Resources 14
Livestock and Wild Horses/Burros 14
Visual Resources 15
Cultural Resources 15
Recreation 15
Land Use Plans 15
Socioeconomics 16

ENVIRONMENTAL CONSEQUENCES OF ALTERNATIVES 17

No Action/No Wilderness Alternative 17
All Wilderness Alternative 18
Partial Wilderness Alternative (Proposed Action) 18

HOWELL PEAK WSA

(UT-050-077)

INTRODUCTION

General Description of the Area

The Howell Peak WSA consists of approximately 24,800 acres of public land in northwestern Millard County, Utah. The WSA is located approximately 45 miles west of Delta, Utah. Major features include Howell Peak (elevation 8,348 feet), Antelope Peak (elevation 7,805 feet), caves, and trilobite fossil beds. Principal land uses are livestock grazing and low intensity recreation. The WSA is roughly 8 miles long and 8 miles wide at its widest point. It is immediately south of the Swasey Mountain WSA and separated from it by the Dome Canyon Road. The Howell Peak WSA is about 1 mile north of the Notch Peak WSA.

In general, vegetation is typical of the other mountain ranges in the region with a variety of shrubs and grasses throughout the WSA and pinyon-juniper woodland at the higher elevations.

Climate is typical of the Great Basin: limited precipitation, low relative humidity, high frequency of clear skies, and large annual and daily ranges in temperature. Precipitation ranges from 12 to 20 inches annually depending on elevation. Temperature ranges have been recorded from 13.2 degrees to 94.9 degrees Fahrenheit (F), depending on season and elevation.

Changes for the Final EIS

In addition to the changes noted in the Introduction to Volume II, the following changes specific to the WSA have been made since publication of the Draft EIS.

1. Descriptions of the No Action/No Wilderness and Partial Wilderness Alternatives have been revised to coincide with the Warm Springs RMP, which has replaced the House Range MFP since publication of the Draft EIS.

2. The anticipated surface disturbance presented in the Draft EIS (256 acres) was based on the assumption that all mineral and other resources potentially within the WSA would be developed sometime in the future without consideration of technical or economic feasibility. In response to public comments relative to the feasibility of developments, the disturbance estimates have been revised to focus on activities projected to be feasible within the foreseeable future (see Appendix 6 in Volume I). This resulted in a reduction of surface disturbance estimates from the 256 acres reported in the Draft EIS to no surface disturbance for the Final EIS.

Specific Issues Identified Through Scoping and Public Comment

- Issues Considered But Not Analyzed in Detail

In addition to the issues discussed and eliminated from further consideration in the Introduction to Volume II (i.e., impacts on air quality, geology and topography, soils, water rights, and land use plans and policies), the following issues or impacts specific to the Howell Peak WSA were considered but are not analyzed in detail in the Final EIS for the reasons described below.

1. Vegetation Including Special Status Species: Estimates of surface disturbance without wilderness designation have been revised downward from the 256 acres reported in the Draft EIS to no mineral-related surface disturbance in the Final EIS. Given this new scenario, the impacts to vegetation would not be significant with any of the alternatives. There are no threatened, endangered, or proposed threatened or endangered plant species known to occur within the WSA. In any event, BLM would conduct site-specific clearances of potentially disturbed areas and consult with FWS concerning impacts on threatened or endangered plant species. Therefore, impacts on vegetation are not analyzed in detail for the Howell Peak WSA.

2. Water Resources: There are no perennial streams, springs, or groundwater aquifers in the WSA. Therefore, impacts on water uses and quality are not discussed in detail in the Final EIS.

3. Mineral Resources: The public has expressed concern that wilderness designation would interfere with or prevent mineral exploration, development, and production.

STATEWIDE
POCKET MAP
WSA
NO. 7
SEE VOL.I

There are 12 post-FLPMA oil and gas leases within the WSA. However, the geologic history of the WSA indicates that large structural traps for oil and gas are unlikely to occur. Potential oil and gas deposits are small with a low certainty that they exist.

Even though there are 74 mining claims inside the WSA, there are no known occurrences of locatable base and precious metals inside the WSA. BLM believes that uranium and other locatable mineral deposits are small and/or could not be economically developed in the foreseeable future (see Appendix 6 in Volume I). More accessible deposits of salable minerals exist outside the WSA. For these reasons, it is determined that mineral exploration or development would not occur in the foreseeable future with or without wilderness designation. Therefore, impacts on mineral and energy exploration and production are not analyzed in detail in the Final EIS.

4. Wildlife Including Special Status Species: The public is concerned that without wilderness designation mineral or other developments would destroy wildlife habitat and lead to reductions in wildlife populations. There is also some concern that use of ORVs would disturb wildlife and destroy habitat.

The Howell Peak WSA provides habitat for a variety of animal species, but populations are low and no one species can be described as abundant. Two endangered and six other special status species may be found in the WSA. However, there are no Federally designated critical habitats in the WSA and no existing or proposed habitat improvement projects.

Because no mineral developments are expected in the WSA in the foreseeable future, wildlife habitats would not be lost. Recreation use is light (estimated at under 50 visitor days per year) and vehicle use is mainly on the 7 miles of ways in the WSA. Given these conditions, the impacts on wildlife habitat and populations are not significant issues for the Final EIS.

5. Forest Resources: The only forest resources in the WSA are 10,416 acres of pinyon-juniper woodland. Demand is low and only half of the woodland is accessible. For these reasons, impacts on forest resources are not significant issues for analysis in the Final EIS.

6. Wild Horses: Approximately 10 wild horses use portions of the WSA in the winter months and up to 20 wild horses use the area in spring and summer. Because wild horses would remain in the WSA with any of the alternatives, and developments are not projected, impacts on wild horses are not significant issues for the Final EIS.

7. Visual Resources: As discussed above, no surface disturbance is projected for the WSA in the Final EIS. Therefore, visual resources would not be significantly affected.

8. Cultural Resources: Cultural resources could be destroyed by surface-disturbing activities, use of vehicles, or vandalism. However, there are only two cultural resource sites in the Howell Peak WSA. No mineral-related surface disturbance is projected. Visitation is light (less than 50 visitor days per year) and vehicles are used mainly on the 7 miles of ways inside the WSA.

Additionally, inventories for the purpose of site recordation and mitigation of impacts would take place prior to any surface disturbance in the future. Given these conditions, impacts on cultural resources are not significant issues for the Howell Peak WSA WSA.

9. Recreation: The public has expressed concern that wilderness designation would change recreational use from motorized to primitive or, conversely, that without wilderness designation motorized recreation will eliminate or reduce opportunities for primitive recreation. Recreational use of the Howell Peak WSA estimated at only 50 visitor days per year, is projected to increase to only 440 per year over the foreseeable future. Therefore, impacts on recreation use would not be significant and are not analyzed in detail in the Final EIS.

10. Economic Conditions: The public, including State and local government, is concerned that wilderness designation would preclude mineral or other economic developments and adversely affect local economic conditions. Others believe that primitive recreation use would increase following wilderness designation and would contribute to the local economy.

There are no existing or anticipated mineral developments or proposals for lands or realty activities which would be impaired with or without wilderness designation. Because no economic developments are expected, and because recreational use is only 25 visitor days per year, impacts on economic conditions for the Howell Peak WSA are not a significant issue for the Final EIS.

HOWELL PEAK WSA

- Issues Analyzed in Detail

The significant issues for the Howell Peak WSA are:

1. Impacts on the wilderness values of naturalness, opportunities for solitude and primitive recreation, and special features.

2. Impacts on livestock management.

Comments made during the public comment period for the Draft EIS addressed:

1. The possibility of combining the Howell Peak WSA with the Swasey Mountain and Notch Peak WSAs to make a House Range Wilderness Complex.

2. The value of benchlands in preserving complete ecosystems.

3. The need for the rationale for the proposed action alternative.

4. The value of caves to wilderness.

5. The adequacy of the geology section.

6. Underrating of mineral values by BLM.

7. The need to protect a transmission line corridor between the Howell and Notch Peak WSA.

See Volume VII-B for responses to general comments applicable to all WSAs and/or the Statewide analysis and see Volume VII-C, Section 7, for responses to specific comments about the Howell Peak WSA.

DESCRIPTION OF THE ALTERNATIVES

Alternatives Considered and Eliminated from Detailed Study

An alternative that would combine the Howell Peak, Swasey Mountain, and Notch Peak WSAs into a House Range Wilderness Complex was suggested in the public comments. This suggestion is not appropriate for the individual WSA analysis because the purpose of this section is to analyze the Howell Peak WSA as a single unit. This alternative was considered as a possibility in Volume I, Statewide Overview, but was not analyzed in detail. See the responses to General Comments 3.19 and 3.28. No other alternatives were identified for this WSA other than those analyzed.

Alternatives Analyzed

Three alternatives are analyzed for this WSA: (1) No Action/No Wilderness (2) All Wilderness (24,800 acres); and (3) Partial Wilderness (Proposed Action) (14,800 acres). A description of BLM's management practices with each alternative follows. Where management intentions have not been clearly identified, assumptions are made based on management projections under each alternative. These assumptions are indicated in each case. The projected BLM management actions presented in the Introduction to Volume II are also applicable.

- No Action/No Wilderness Alternative

With this alternative, none of the 24,800 acre Howell Peak WSA would be designated by Congress as part of the NWPS. Although BLM's land use plans are regularly updated, it is assumed that the area would continue to be managed in accordance with the Warm Springs RMP (USDI, BLM, 1987b) and supporting activity plans. The State lands within the WSA (refer to Map 1 and Appendix 3 in Volume I) have not been identified in the RMP for special Federal acquisition through exchange or purchase. State lands are assumed to remain under State ownership.

- Management Conditions and Constraints

All 24,800 acres would remain open to mineral location, leasing (with standard lease stipulations), and sale. Development work, extraction, and patenting would be allowed on 74 existing mining claims (1,480 acres) and potential future mining claims. Development would be regulated by unnecessary or undue degradation regulations (43 CFR 3809). Twelve post-FLPMA leases (approximately 15,539 acres) are in the WSA. Future oil and gas leases could be developed under leasing Category 1 (standard stipulations). Although minerals would be managed as described above, mineral exploration or development is not projected for the WSA because the level of known resources and the probability of their development is too low to support a development assumption.

The present domestic livestock grazing use of the 24,800 acre area of the WSA would continue as authorized in the RMP (an estimated 1,349 AUMs). No new range facilities are planned.

HOWELL PEAK WSA

Map 1
LAND STATUS
Howell Peak WSA
UT-050-077

Legend

WSA Boundary

State Land Within or Adjacent to WSA

BLM Administered Land Within or Adjacent to WSA

SCALE IN MILES
0 1 2

SCALE IN KILOMETERS
0 1 2 3

N

ELEVATION EXPRESSED IN METERS

T. 16 S.

T. 17 S.

T. 18 S.

R. 14 W.

R. 13 W.

The 24,800 acres would be open for ORV use in accordance with the Warm Springs RMP. The 7 miles of existing ways would remain open for public use.

The entire 24,800-acre area would continue to be open to harvest of forest products; however, there is minimal harvest at the present time (10 cords per year) and increases in harvests are not expected because of low demand and lack of access.

The area would continue to be managed under VRM Class III on 16,864 acres and Class IV on 7,936 acres.

- Action Scenario

BLM projects that implementation of the No Action/No Wilderness Alternative would not result in any surface-disturbing activities in the foreseeable future. No locatable or leasable mineral resource exploration or development is anticipated. No rangeland, wildlife habitat, or watershed improvement projects are planned. No disturbance is anticipated from ORV activity due to terrain constraints.

Recreation use is anticipated to increase over the current estimated use of less than 50 annual visitor days at a rate of 2 to 7 percent per year. Approximately 50 percent of the use would involve vehicular activity mainly on the existing 7 miles of ways.

- All Wilderness Alternative

With the All Wilderness Alternative, all 24,800 acres of the Howell Peak WSA would be designated by an act of Congress as part of the NWPS (refer to Map 2). It would be managed in accordance with the BLM Wilderness Management Policy (BLM Manual 8560) to preserve its wilderness character.

The policy of the State is to reserve its position regarding exchange of in-held lands within any particular WSA (see Chapter 1 in Volume I). Based on this policy regarding exchange of State lands, it is projected that State and private lands would remain under existing ownership. There are four State sections (2,559.3 acres) within the WSA (refer to Map 1 and Volume I, Appendix 3). There are no private or split-estate lands in the WSA. The figures and acreages given for this alternative are for Federal lands only.

- Management Conditions and Constraints

After wilderness designation, all 24,800 acres would be withdrawn from mineral location and closed to new mineral leasing and sale. Development work, extraction, and patenting would be allowed to continue on that portion of 74 existing mining claims (1,480 acres) that may be determined to be valid. The 12 existing post-FLPMA oil and gas leases (15,539 acres) would be phased out upon expiration unless a find of oil or gas resources in commercial quantities is shown. Mineral exploration or development are not projected for the Howell Peak WSA because the level of known resources and the probability of their development are too low to support that assumption. Appendix 6 in Volume 1 explains the mineral exploration and development projections.

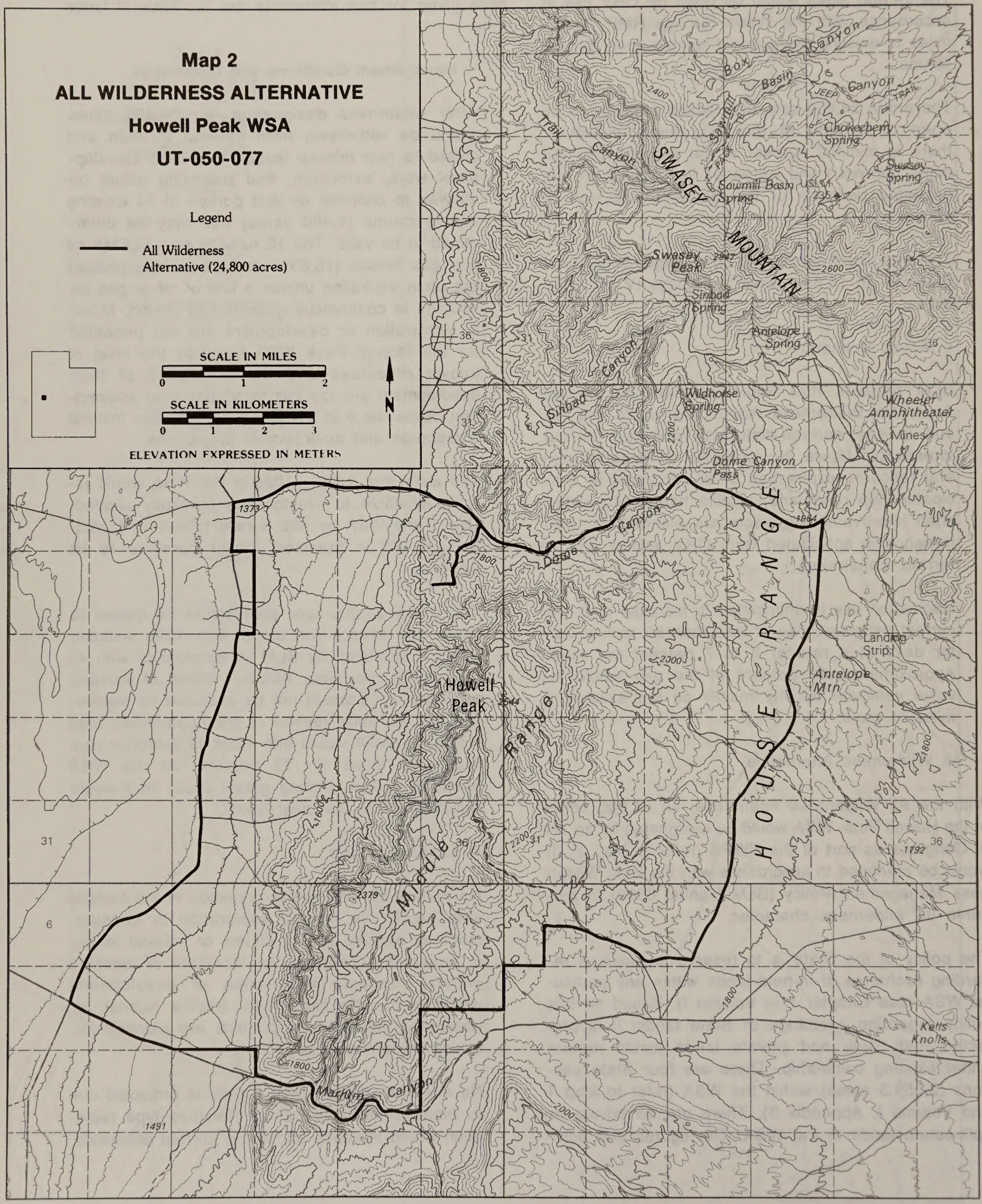
The estimated 1,349 AUMs in the WSA would remain available to livestock as presently allotted. Use of the WSA by wild horses (about 10 in winter and 20 in summer) would continue to be allowed.

The entire 24,800-acre area would be closed to ORV use except for users with valid existing rights if approved by BLM in accordance with 43 CFR 8560 provision. About 7 miles of existing vehicular ways would not be available for vehicular use. A 1-mile section of cherry-stemmed road within the WSA would stay open to vehicular use. About 23 miles (or 73 percent) of the WSA boundary follow existing gravel roads that would remain open to vehicular travel.

- Action Scenario

No surface disturbance is projected in the foreseeable future. No mineral exploration or development on existing mining claims or mineral leases is projected. Therefore, no locatable or leasable mineral resource exploration or development would occur. No rangeland, wildlife habitat, or watershed improvement projects are planned following wilderness designation.

No disturbance from ORV activity is projected due to management constraints. Primitive type recreation would increase above the current estimated


Map 2
ALL WILDERNESS ALTERNATIVE
Howell Peak WSA
UT-050-077
Legend
All Wilderness Alternative (24,800 acres)
SCALE IN MILES
0 1 2
SCALE IN KILOMETERS
0 1 2 3
N
ELEVATION EXPRESSED IN METERS
T. 16 S.
T. 17 S.
T. 18 S.
R. 14 W.
R. 13 W.
SWASEY MOUNTAIN
RANGE
HOUSE
Box Canyon
Basin
JEEP TRAIL
Trail Canyon
Chokecherry Spring
Sawmill Basin
Spring
Swasey Peak
2947
Sinbad Spring
Antelope Spring
Sinbad Canyon
Wildhorse Spring
Wheeler Amphitheater
Mines
Dome Canyon Pass
Dome Canyon
Howell Peak
Middle Range
Landing Strip
Antelope Mth
Marjum Canyon
Kells Knolls
1373
1984
1792
2379
1491
2400
2600
2200
2000
1800
1600
36
31
6
1

primitive use of less than 25 visitor days annually at a rate of 2 to 7 percent per year.

- Partial Wilderness Alternative (Proposed Action)

For the Partial Wilderness Alternative, 14,800 acres of the Howell Peak WSA would be designated as wilderness (refer to Map 3). The objective of this alternative is to analyze as wilderness those portions of this WSA that have the best wilderness values. BLM believes that wilderness values are of a higher quality in areas where outstanding opportunities for solitude and/or primitive recreation exist, preferably in combination with special features. In forming this alternative, the portions of the WSA with outstanding opportunities for solitude and special features were included where possible within a manageable boundary. The 10,000-acre foothill area within the WSA, but outside of that designated as wilderness, would be managed in accordance with the Warm Springs RMP as described for the No Action/No Wilderness Alternative. The 14,800-acre area designated as wilderness would be managed in accordance with the BLM Wilderness Management Policy (BLM Manual 8560) as described in the All Wilderness Alternative.

The policy of the State is to reserve its position regarding exchange of in-held lands within any particular WSA. Based on this policy regarding exchange of State lands, it is projected that State lands would remain under existing ownership. There are two State sections (1,279.3 acres) in the portion of the WSA that would be designated wilderness (refer to Map 1 and Appendix 3 in Volume I). There are no private or split-estate lands in the WSA. The figures and acreages given for this alternative are for Federal lands only.

- Management Conditions and Constraints

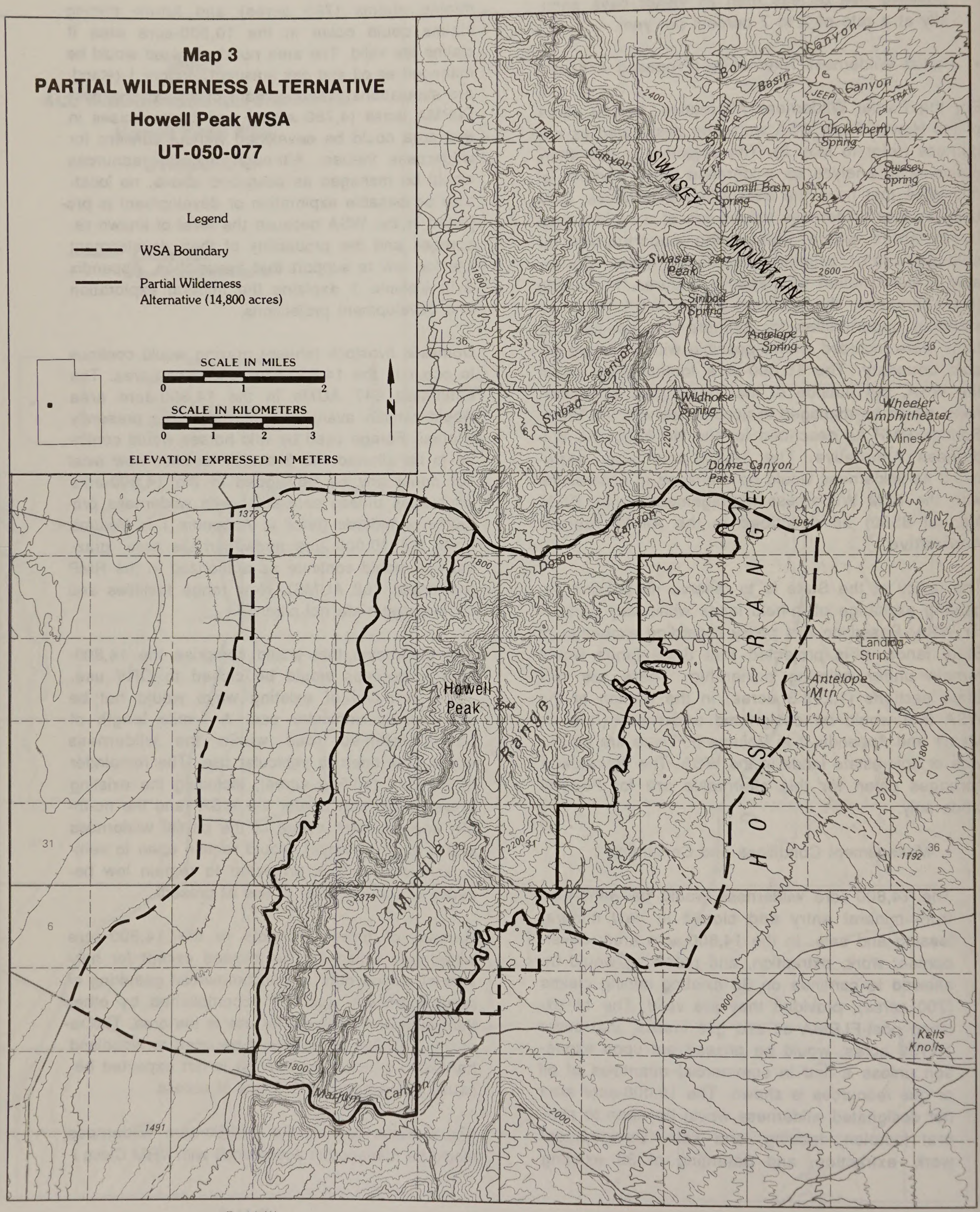
The 14,800-acre wilderness would be withdrawn from mineral entry and closed to new mineral leasing and sale. In the 14,800-acre area, development work, extraction, and patenting would be allowed to continue on 35 existing mining claims (700 acres), provided they are valid. The 11 existing post-FLPMA oil and gas leases, that cover 10,759 acres, would be phased out upon expiration unless a find in commercial quantities of oil or gas resources is shown. The 10,000-acre area not designated wilderness would be open to mineral location, leasing, and sale. Development work, extraction, and patenting of 39 existing mining claims (780 acres) and future mining claims could occur in the 10,000-acre area if claims are valid. The area not designated would be managed as oil and gas leasing Category 1 (standard stipulations). Development of an existing post-FLPMA lease (4,780 acres) and future leases in this area could be developed without concern for wilderness values. Although mineral resources would be managed as described above, no locatable or leasable exploration or development is projected in the WSA because the level of known resources and the probability of their development are too low to support that assumption. Appendix 6 in Volume 1 explains the mineral exploration and development projections.

Domestic livestock (sheep) grazing would continue to occur in the 14,800-acre wilderness area. The estimated 647 AUMs in the 14,800-acre area would remain available to livestock as presently allotted. Forage used by wild horses would continue to be allowed. No livestock facilities now exist nor could any be developed in the 14,800-acre wilderness unless consistent with wilderness protection standards (refer to Appendix 1 in Volume I). In the 10,000-acre nonwilderness area, grazing use would continue as authorized in the RMP (estimated 702 AUMS). New range facilities and developments are not planned.

The mountains that would comprise the 14,800-acre wilderness would be closed to ORV use. About 3 miles of existing ways would not be available to vehicular use. A 1-mile length of cherry-stemmed road within the wilderness would stay open to vehicular use. The remainder of the unit (10,000 acres), including the existing gravel roads that border the WSA (and the northern and southern edges of the partial wilderness and 4 miles of ways), would remain open to vehicular travel. Use is projected to remain low because of the low level of use at present.

Harvest of forest products in the 14,800-acre wilderness would not be allowed except for harvest of pinyon nuts or noncommercial gathering of dead-and-down wood, if accomplished by other than mechanical means for use in the area. The remaining 10,000 acres would be open to woodland harvest but increased harvest is not expected because of low demand and lack of access.

Visual resources on the 14,800-acre wilderness would be managed in accordance with VRM Class I


Map 3
PARTIAL WILDERNESS ALTERNATIVE
Howell Peak WSA
UT-050-077
Legend
WSA Boundary
Partial Wilderness Alternative (14,800 acres)
SCALE IN MILES
0 1 2
SCALE IN KILOMETERS
0 1 2 3
N
ELEVATION EXPRESSED IN METERS
T. 16 S.
T. 17 S.
T. 18 S.
R. 14 W.
R. 13 W.
Box Canyon
Basin
JEEP TRAIL
Canyon
Chokecherry Spring
Swasey Spring
Trail Canyon
SWASEY MOUNTAIN
Sawmill Basin Spring
Swasey Peak
2947
Sinbad Spring
Antelope Spring
Wildhorse Spring
Sinbad
Canyon
Wheeler Amphitheater
Mines
Dome Canyon Pass
Dome Canyon
HOUSE RANGE
Howell Peak
Middle Range
Landing Strip
Antelope Mtn
Kells Knolls
Marjum Canyon
2400
2600
2200
1800
2000
1373
1379
1491
1544
1964
1792
36
31
6
1

standards, which generally allow for only natural ecological change. The remaining 10,000 acres would be managed as VRM Class III on 2,064 acres and Class IV on 7,936 acres as outlined in the Warm Springs MFP.

- Action Scenario

No surface disturbance is projected for either the designated or nondesignated portions of the WSA. No mineral resource exploration or development would occur. No rangeland, wildlife habitat, or watershed improvement projects are planned following wilderness designation.

No disturbance from ORV use is projected due to management and terrain constraints. Recreational use is projected to increase above the current estimated use of less than 50 annual visitor days at a rate of 2 to 7 percent per year. About 40 percent of the use would involve vehicular activity on 4 miles of ways in the nondesignated area.

Summary of Environmental Consequences

Table 1 presents the environmental consequences of alternatives.

AFFECTED ENVIRONMENT

This section describes the overall environmental setting. This information allows for independent assessment by the public (as required by the CEQ guidelines) and provides a data base for the cumulative Statewide analysis found in Volume I, as well as for the Environmental Consequences of Alternatives section for this WSA.

Unless otherwise indicated, information for this section was taken from BLM staff specialists, technical reports, and file documents.

Wilderness Values

- Size

The WSA is approximately 24,800 acres in size. It is roughly 8 miles wide and 8 miles long.

- Naturalness

The central portion of the WSA (totaling approximately 22,080 acres) is pristine. There are approximately 7 miles of ways on the periphery of the WSA. Most are substantially unnoticeable and could be rehabilitated. One exception is 2 miles of ways to mining claims in the northern part of the WSA. Since establishment of the WSA approximately 0.50 acre of the WSA has been disturbed by construction of 2,000 feet of road to the claims. This activity is a grandfathered use and even though the disturbed area has not been reclaimed, it was determined that the entire WSA meets the Wilderness Act criteria for naturalness.

- Solitude

The WSA is of sufficient size to allow visitors to be unaware of others in the vicinity. Rugged topography, steep cliffs, and pinyon-juniper woodland contribute to outstanding opportunities for solitude in 60 percent (14,880 acres) in the central portion of the WSA. Forty percent (9,920 acres) of the WSA (benchlands on the east and west sides) does not have outstanding opportunities for solitude due to the relatively flat, unvegetated terrain.

The Howell Peak WSA is within the South Range of the USAF's Utah Test and Training Range. The South Range runs approximately north to south from the southern boundary of the Bonneville Salt Flats to the San Francisco Mountains and east to west from the Sheeprock Mountains to 17 miles within Nevada. This is one of the Nation's busiest military air spaces. There are 15,000 aircraft including all types of tactical fighters and bombers in the area. There are from 200 to 150 (conservative estimate) aircraft flights per day over the South Range 6 days per week. Flights occur as low as 100 feet above the ground surface. Speeds are subsonic except in the very northern portion of the test range in the area around Ibapah, where supersonic speeds are also reached. Heaviest use areas are in the northern part of the test range in the WSA. Aircraft occasionally fly directly over the WSA, and these overflights can be a source of annoyance to visitors seeking solitude. Most of these overflights are not directly over the WSA and are subsonic in this area. Military flights are occasional off-site sight and sound intrusions that detract from the overall opportunities for solitude.

- Primitive and Unconfined Recreation

Opportunities for primitive, unconfined recreation were evaluated by considering miles of hiking routes in relationship to the size of the WSA, the number of recreational opportunities present, and the quality of these opportunities. As discussed in the Recreation

HOWELL PEAK WSA

Table 1
Summary of Environmental Consequences

Resource	Alternatives		
	No Action/No Wilderness	All Wilderness (24,800 Acres)	Partial Wilderness (14,800 Acres) (Proposed Action)
Impacts on Wilderness Values	Wilderness values would not be protected by wilderness designation. No significant disturbance of wilderness values is anticipated in the foreseeable future. Continued vehicular use of about 7 miles of ways would detract from opportunities for solitude and primitive recreation.	Wilderness designation would preserve wilderness values of naturalness, opportunities for solitude and primitive recreation, and special features.	Wilderness values would be preserved in the designated area which is about 58 percent of the WSA. Vehicular use of 4 miles of ways in the nondesignated area would continue to detract from opportunities for solitude and primitive recreation.
Impacts on Livestock	Livestock grazing would not be adversely affected because management type access would continue as at present.	Restrictions could inconvenience livestock operators. Management costs and sheep losses to predators could increase slightly.	Effects would be the same as for the All Wilderness Alternative.

section, the WSA has diverse opportunities; however, no activities are considered outstanding in quality.

- Special Features

Special features identified during the BLM wilderness inventory include caves and fossils. Council Cave, near Antelope Peak, has the largest entrance of any cave in Utah. It is visible from over 50 miles away. Other caves are known to exist in the WSA, but no number is available. The trilobite fossils, found in the eastern part of the WSA, would enhance a recreational visit. However, they are of lower quality and quantity than the similar fossils found a few miles north of the WSA. Approximately 10 acres of trilobite beds occur within the WSA.

The WSA has resource values that, although not identified as such during the wilderness inventory, could be considered special features. There are two endangered animal species (bald eagle and peregrine falcon), and one BLM sensitive species (golden eagle) inhabiting the WSA. Five Category 2 candidate wildlife species may occur in the WSA. One Category 2 candidate plant species (Cryptantha compacta) could occur in the WSA. The central part of the WSA is a good example of Basin and Range land forms related to blockfaulting. Two percent of the WSA has Class A scenery.

- Diversity

This WSA is in the Intermountain Sagebrush Province Ecoregion. It has the PNV types of juniper-pinyon woodland and saltbush-greasewood. Refer to the Vegetation Including Special Status Species section for more discussion on ecoregions and PNV types. To see how the ecoregion and PNV types represented by this WSA compare Statewide and nationally with existing and potential NWPS units, refer to the Wilderness Values section in Volume I.

This WSA is within a 5-hour drive from three standard metropolitan statistical areas. These are Salt Lake City-Ogden, Utah; Provo-Orem, Utah; and Las Vegas, Nevada.

Air Quality

The WSA is located in a PSD Class II area under the provisions of the Clean Air Act as amended. Existing air quality and visibility are generally excellent throughout the year. Visual range usually is 70 miles or more during the summer (EPA, 1979). The nearest PSD Class I area is Capitol Reef National Park, 115 miles to the southeast.

Geology and Topography

The Howell Peak WSA is located in the Basin and Range Physiographic Province. In general, this province is characterized by low rainfall, internal drainage, and short north-south trending blockfault mountain ranges.

The WSA is in the middle of the House Range, a 50 mile long blockfaulted mountain range in west-central Utah. Elevations average 5,500 feet on the desert floor and rise abruptly to over 8,000 feet along the prominent west face. The two features dominating the WSA are Howell Peak and Antelope Peak. Major geologic formations exposed in the WSA consist of massive Cambrian limestones, underlain by the Pioche Formation.

The eastern and western portions of the WSA have somewhat more subdued topography; slopes are less steep than the central part of the WSA, and the overall appearance is less rugged.

Soils

The soils of the mountain slopes and ridge tops are alkaline, light brown, cobbly and stony loams. The lower alluvial fans and lake terraces are very deep, light gray, alkaline, very gravelly loams and loamy sands. There is no serious erosion condition in the WSA. Based on soil surface factors, the entire WSA is in a slight erosion condition classification. The 24,800 acres in the WSA have an average annual soil loss of 0.6 cubic yards per acre for a total soil loss of 14,880 cubic yards per year.

Reclamation potentials vary and can be determined only on a site-specific basis. Much of the WSA has limited reclamation potential due to soil and climate factors. Some alluvial fans and lake terraces with loamy soils have fair potential for reclamation.

Vegetation Including Special Status Species

In general, vegetation in the Howell Peak WSA is typical of the other mountain ranges in the region with a variety of shrubs and grasses throughout the WSA and pinyon-juniper woodland at the higher elevations. Existing vegetation types are shown in Table 2.

Table 2
Existing Vegetation Types

Existing Vegetation Type		Acres	Percent of WSA
Pinyon-juniper woodland		10,418	42
Sagebrush-horsebrush		8,680	35
Shadscale-horssebrush-cheatgrass		5,704	23
	Total	24,800	100

Source: Foster, 1968; and USDI, BLM, 1987b.

No threatened or endangered plant species are known to occur within or near the WSA boundaries (Appendix 4 in Volume I). One Category 2 candidate species, Cryptantha compacta is known to exist near the WSA. There is no riparian vegetation in the WSA.

The Howell Peak WSA is in the Intermountain Sagebrush Province Ecoregion as shown on the Bailey-Kuchler ecosystems map (USDI, USGS, 1978). The PNV types in the WSA are listed on Table 3.

Table 3
Potential Natural Vegetation Types

PNV Type		Acres	Percent of WSA
Juniper-pinyon woodland		14,880	60
Saltbush-greasewood		9,920	40
	Total	24,800	100

Source: USDI, USGS, 1978.

Water Resources

There are no springs, perennial streams, or groundwater aquifers in the WSA.

Mineral and Energy Resources

Ratings for individual mineral and energy resources are shown in Table 4. Refer to Appendix 5 in Volume I for an explanation of the SAI rating system.

The WSA could contain deposits of beryllium, lead, zinc, and tungsten that are currently listed as strategic and critical materials (USDoD, 1988).

- Leasable Minerals

There are no known occurrences of leasable minerals in the WSA. Activity related to leasable minerals in and adjacent to the WSA has been limited to leasing and minor exploration (seismic surveys and geologic mapping) for oil, gas, and geothermal resources.

Table 4
Mineral and Energy Resource Rating Summary

Resource	Rating: Favorability[a]	Rating: Certainty[b]	Estimated Resource
Oil and Gas	f2	c2	Less than 10 million barrels of oil; less than 60 billion cubic feet of gas
Uranium	f1	c1	Little or none
Geothermal	f2	c1	Low temperature resource
Beryllium	f2	c1	Less than 10 metric tons
Lead/Zinc	f2	c1	Less than 50,000 metric tons
Tungsten	f2	c1	Less than 500 metric tons

Source: SAI, 1982; USDI, BLM, 1987d.

[a]Favorability of the WSA's geologic environment for a resource (f1 = lowest favorability or smallest size deposit; f4 = highest favorability or largest size deposit).

[b]The degree of certainty that the resource does or does not exist within the WSA (c1 = lowest and c4 = highest).

- Oil and Gas

The geologic history of the WSA indicates that large structural traps for oil and gas are unlikely to occur; however, random small traps may exist. The favorability for small oil and gas deposits occurring in the WSA is f2. It is estimated that up to 10 million barrels of oil or 60 billion cubic feet of gas could be recoverable from the WSA.

Based on seismic and mapping data, and the geologic favorability the certainty has been rated low (c2) (Molenaar 1983). There are 12 post-FLPMA oil and gas leases in the WSA that cover 15,539 acres. The present oil and gas leasing category is Category 1 (standard stipulations).

- Geothermal

The geologic favorability for the occurrence of geothermal resources is f2, with a very low degree of certainty c1. Commercial potential is presently unknown and there are no geothermal leases in the WSA.

- Locatable Minerals

There are no known occurrences of locatable base and precious metals inside the WSA. Some exploration activities have taken place but no production has resulted. No anomlous concentrations of any metals were found in samples from the WSA (Tuftin, 1987). A

total of 74 claims covering about 1,480 acres are in the WSA.

- Beryllium

The Howell Peak WSA is about 35 miles south of the Spor Mountain beryllium district where the world's largest known beryllium deposits occur, contained in bedded rhyolite tuffs. Beryllium minerals have been discovered in other parts of west-central Utah, particularly in Tooele and Juab Counties, and in the Mineral Range in Beaver County. These deposits are much smaller than those at Spor Mountain, and they occur chiefly in beryl-bearing pegmatites, as beryl rosettes in granite, and in fine- and coarse-grained veins. West-central Utah lies at the east end of a beryllium-rich province that extends as far west as central Nevada. The Howell Peak WSA is in a region that is broadly favorable for beryllium although these deposits are not known to occur in or near the tract. Because of this regional favorability, there is some chance that this mineral could occur in the WSA, and the tract has been rated as f2, with a very low (c1) degree of certainty.

- Lead and Zinc

The closest lead and zinc deposits to the Howell Peak WSA with recorded production are far to the south in Beaver County. Significant production has not been recorded anywhere in Millard County. Base-metal deposits in western Utah are related chiefly to Tertiary igneous activity and associated hydrothermal alternation. The bulk of these deposits occur within two west-trending zones: the Deep Creek-Tintic mineral belt to the north of the Howell Peak WSA and the Wah Wah-Tushar mineral belt to the south of the WSA. That part of western Utah separating the two mineral belts contains only scattered and small mineral deposits and very few Tertiary igneous rocks.

The Howell Peak WSA contains favorable carbonate host rocks for lead and zinc, plus a nearby intrusive source for these metals (the Notch Peak or Painter Spring granite to the south). Exploration in the area, however, indicates that significant lead and zinc mineralization has not occurred. However, the WSA lies within a region that is broadly favorable for lead and zinc. Therefore, there is a very low certainty (c1) that small (f2) deposits of lead and zinc exist. Minor amounts of gold, silver, copper and molybdenum could also occur (SAI, 1982).

- Tungsten

Tungsten production, reserves, and resources in Utah are comparatively small. Twenty-one deposits are reported in the State and all except one are in the western side of the State within the Basin and Range Province. Small amounts of production from 12 of these deposits occurred from 1914 to 1918, from 1940 to 1947, and from 1951 to 1956. Most of these deposits occur along the metamorphosed contact between granite and limestone, but tungsten-bearing quartz veins are reported from the Tushar Mountains south of Tract 077 (SAI, 1982).

Many small bodies of scheelite-bearing tactite occur 4 miles south of the Howell Peak WSA along the contact between granite and upper Cambrian limestones. However, the ore bodies are mostly low grade and relatively small. Because the WSA lies within a region that is broadly favorable for tungsten, the favorability exists for small deposits (f2), but the certainty is considered very low (c1) (SAI, 1982).

- Uranium

The Howell Peak WSA lies 60 miles north of the Wah Wah Mountains uranium-producing district and about 30 miles south of the Topaz Mountain uranium area. The uranium occurs in close association with high-silica alkali rhyolites of Miocene Age. At Topaz Mountain in the Thomas Range, several thousand tons of uranium ore were mined from Tertiary lacustrine rocks at the Yellow Chief Mine from 1956 to 1962. In addition, the Thomas Range contains uranium-bearing fluorspar pipes that cut Paleozoic dolomites.

Many of the base and precious metal deposits in western Utah (including uranium) are aligned along two west-trending belts characterized by igneous intrusive rocks of Tertiary Age. The Howell Peak WSA lies between but outside of these mineral belts; therefore, the favorability for uranium in the WSA is very low (f1) and also the certainty is low (c1) (SAI, 1982).

- Salable Minerals

Large quantities of limestone, as well as quartzite, sand, and gravel deposits, are found in the WSA; however, little interest is expressed in these resources due to the abundance of other deposits closer to the centers of demand.

Wildlife Including Special Status Species

There are approximately 50 species of mammals, 103 species of birds, 14 species of reptiles, and one amphibian species that inhabit the WSA at different times of the year. Although a great diversity exists, no one species could be described as being abundant. Some of the animals include mule deer, bobcat, mountain lion, and chukar. An estimated 10 mule deer utilize the WSA during the winter. The WSA generally is not used year-round by deer.

There are two endangered (bald eagle and peregrine falcon) and one BLM sensitive species (golden eagle) that inhabit the WSA. Five Category 2 candidate species could occur in the WSA. These are the ferruginous hawk, long-billed curlew, Swainson's hawk, western snowy plover and white-faced ibis. These species are birds that frequent areas throughout the Great Basin and other parts of the western United States. Refer to Appendix 4 in Volume I for details.

There are no Federally designated critical habitats in the WSA.

There are no existing or proposed habitat improvement or vegetation treatment projects within the WSA. The WSA encompasses approximately 21,000 acres of lightly utilized habitat for mule deer and 5,600 acres of yearlong chukar habitat. A mule deer migration corridor extends through the WSA.

Approximately 12,000 acres of the WSA are managed under the West Desert HMP (USDI, BLM, 1980c) to benefit chukar partridge, mule deer, and raptors.

Forest Resources

There are approximately 10,416 acres of pinyon-juniper woodland capable of producing fence posts and firewood. Currently, approximately 5,630 acres are suitable for harvest and are accessible. An additional 1,330 acres have commercial potential but are inaccessible.

The 6,960 acres of commercial and potentially commercial pinyon-juniper woodland have a total estimated volume of 26,733 cords of firewood, 4,520 fence posts, and 2,670 lb of pine nuts. Demand for these products in the WSA is currently low. Approximately 10 cords of wood are requested each year.

Livestock and Wild Horses/Burros

Due to the rugged terrain, there are no cattle grazing in the WSA; however, approximately 60 to 70 percent of the WSA is grazed by sheep. The WSA contains portions of two allotments used by three sheep operators. Forage production in the WSA is estimated at 1,349 AUMs, or 25 and 27 percent of the AUMs in the allotments involved (refer to Table 5).

There are no range improvements in the WSA, but there are ways that are used by stock operators and by BLM for administrative purposes. Three major sheep camps are located in the Death Canyon allotment on the east side of the WSA. Vehicles frequently are used to establish and supply these camps that are occupied during the grazing season. No areas within the WSA have been identified for vegetation manipulation or other range improvements for livestock benefits.

Table 5
Livestock Grazing Use Data

Allotments	Total Acres	Acres in WSA	Total AUMs	Number of AUMs in WSA	Number and Kind of Livestock	Season of Use	Number of Operators
Death Canyon	27,279	8,880	2,246	601	20,205 Sheep	11/01-04/30	1
Granite	48,801	15,920	2,770	748	22,705 Sheep	11/16-04/15	2
Total	76,080	24,800	5,016	1,349			3

Sources: USDI, BLM, 1987b

APHIS conducts predator control in BLM grazing allotments that comprise the WSA. A total of 42 coyotes were taken in the two allotments in and surrounding the WSA during 1986-1987 period. (USDA, APHIS 1988). Nineteen of the coyotes were taken from aircraft, six were shot, seven were taken by cyanide guns (M-44s), nine by denning, and one by steel trap. The WSA comprises about 33 percent of the area in either of the two allotments. It is not known what proportion of the predators were actually taken within the WSA. The combined, confirmed livestock losses for 1986-1987 in these allotments were 16 sheep. Four of the sheep losses were attributed to mountain lions. An unrecorded number of additional losses were reported by livestock operators.

The WSA is in the Swasey Wild Horse Management Area. Approximately 10 horses use portions of the WSA in the winter months and up to 20 horses use the area in spring and summer. Wild horses migrate through the WSA to watering places in the Antelope Springs area in the summer and utilize snow for water in the winter.

Visual Resources

Hermit Canyon is the only part of the WSA rated as Class A (high quality) scenery. The high rating is due to the vertical cliffs containing a variety of colors, the uniqueness of the canyon, and the lack of visual intrusions.

Higher elevations in the central part of the WSA (comprising some 66 percent [16,368 acres] of the WSA) are rated as Class B scenery. The rating is due to the moderate variety in landform (from sheer cliffs on the west to rolling hills on the east), variety in vegetation (pinyon-juniper woodland, scattered Douglas fir, and desert shrub), and the lack of visual intrusions.

Lower foothills on the east and west sides of the WSA are rated as Class C scenery due to lack of variety in landform, vegetation, and color. A summary of the scenic quality and VRM classes is shown in Table 6 (terms are defined in the Glossary).

Cultural Resources

As of 1988, BLM records indicate that there are two prehistoric sites recorded inside the WSA (USDI, BLM, 1988). One is a cave site that has no visible artifacts and the other is a hunting site located in a small saddle. The potential for finding other sites of this type is good. One rock cabin in Hermit Canyon is the only historical site recorded; however, considering the traditional use of the area by ranchers and sheepherders, there may be other historical sites. None of these sites are on or nominated to the National Register of Historic Places.

Table 6
Visual Resource Quality and Management Class

Element		Acres	Percent of WSA
Scenic Quality Class A		496	2
Scenic Quality Class B		16,368	66
Scenic Quality Class C		7,936	32
	Total	24,800	100
Management Class I		0	0
Management Class II		0	0
Management Class III		16,864	68
Management Class IV		7,936	32
	Total	24,800	100

Source: USDI, BLM, 1987b

Recreation

Fifteen recreational opportunities were evaluated for their quality in this WSA. Eleven of these opportunities are present in varying degrees including backpacking, spelunking, camping, dayhiking, horseback riding, hunting, nature study, photography, rock climbing, rock hounding, and sightseeing. All activities were rated average or below in quality.

The WSA has limited opportunities for extended trips due to its size and configuration; however, its size and access make it suitable for day trips. The current low recreational use is primarily related to exploring three caves and visiting the rock cabin. BLM recreation specialists believe that some hunting and hiking probably takes place, as well as some four-wheel drive use on the 7 miles of ways in the WSA, mainly on the east side. The WSA is open to ORV use. Under 50 visitor days annually are attributed to all recreation activities. About 50 percent of the use is attributed to vehicular use of existing ways.

Land Use Plans

The WSA is BLM-administered public land except for four State sections (2,559.2 acres) (refer to Map 1 and Appendix 3 in Volume I). The current policy of the State is to maximize economic returns from State lands and to reserve its position regarding exchange of in-held lands (see Chapter 1 in Volume I). In 1986,

the Utah State Legislature passed S.C.R. No. 1 opposing any additional wilderness designation in Utah and urging that State lands not be exchanged out of wilderness areas. Of the four sections (2,559.2 acres) of inheld State land, one section (639.2 acres) is under lease for oil, gas and hydrocarbons and has a special use lease arrangement for a USAF communication site. The three remaining sections (1,920 acres) are under lease for grazing and oil, gas, and hydrocarbons. With the exception of the communication site, current activity on these lands is livestock grazing (UDNRE, UDSLF, 1988).

The Howell Peak WSA is in Millard County. The Millard County Master Plan does not specifically address wilderness (Paul Nelson Associates, Inc., 1981). The county plan generally indicates that Federal lands in the county should be utilized to their greatest economic potential under a multiple-use concept.

The Millard County Commission has endorsed the Consolidated Local Government Response to Wilderness (Utah Counties, 1986) that opposes wilderness designation of BLM lands in Utah.

The current BLM planning document for the Howell Peak WSA is the Warm Springs RMP (USDI, BLM, 1987b). Wilderness is not addressed in the Warm Springs RMP. Wilderness designation is part of the BLM multiple-use concept. The BLM land use plan is linked to the Statewide Wilderness EIS through inclusion of the present plan as the No Action/No Wilderness Alternative.

The WSA is in the South Range of the USAF's Utah Test and Training Range. The USAF position is that low level overflights of the Utah Test and Training Range would continue regardless of wilderness designation (USAF, 1986).

Socioeconomics

- Demographics

The Howell Peak WSA is located in Millard County, Utah. Delta is the nearest community, within about 45 miles of the WSA.

From 1960 to 1980, the population of Millard County grew by approximately 28.4 percent to 9,050. Table 7 presents baseline and projected population data for Millard County. It is estimated that between 1980 and 1987 population increased to about 10,415. Population projections for the county indicate that the number of people living in Millard County in the year 2010 will be about 12,900 for about a 43 percent increase over 1980 levels (Utah Office of Planning and Budget, 1987).

Table 7
Baseline and Projected Population and Employment Growth
Millard County

	1980	1990	2000	2010
Population	9,050	11,000	11,600	12,900
Employment	3,645	5,500	6,000	6,700

Source: Utah Office of Planning and Budget, 1987.

- Employment

Table 7 shows the baseline and projected total employment for Millard County to the year 2010. The government sector (Federal, State, and local) is the most important in terms of employment in the Millard County economy. Farm employment makes up about 26 percent of the total employment in Millard County. The Intermountain Power Project contributes significantly to employment in the county. Mining has been declining in recent years.

Millard County is part of the Central MCD. Table 8 shows the baseline (1980) and projected employment by source for the MCD to the year 2010. In 1980 the leading employment sectors for the Central MCD were government (21 percent), agriculture (20 percent), and trade (14 percent). Mining provided approximately 4 percent of the direct employment in the MCD.

Table 8
Southwest Multi-County District
Employment[a]

	1980	1990	2000	2010
Agriculture	3,649	3,500	3,600	3,800
Mining	706	700	800	900
Construction	822	1,400	2,200	2,200
Manufacturing	2,047	1,900	2,200	2,600
Transportation, Utilities	589	1,300	1,400	1,500
Trade	2,604	3,400	4,000	4,900
Finance, Insurance, Real Estate	347	400	500	600
Services	1,439	2,300	2,900	3,500
Government	3,919	4,100	4,100	4,900
Nonfarm Proprietors	2,278	2,800	3,300	4,100
Totals	18,400	21,800	25,000	29,000

Source: Utah Office of Planning and Budget, 1987.

[a]Includes Juab, Millard, Piute, Sanpete, Sevier and Wayne Counties.

It is projected that by the year 2010 employment in the MCD will increase by approximately 58 percent, trade will increase to 17 percent, and services will increase to 12 percent of the total. Government will decline to 17 percent, agriculture to 11 percent, and mining to 3 percent of the total.

- Sales and Revenues

Economic-related activities in the WSA include mineral exploration, livestock production, woodland production, and recreation. Table 9 summarizes local sales and Federal revenues from the WSA. Volume I, Appendix 9 identifies the multipliers used to estimate sales and revenues.

Table 9
Sales and Revenues

Source	Estimated Annual Local Sales[a]	Estimated Annual Federal Revenues
Oil and Gas Leases	0	$31,078
Mining Claim Assessment	$ 7,400	0
Livestock Grazing	$ 26,980	$ 2,077
Woodland Products	750	50
Recreational Use	205	0
Total	$35,335	$33,205

Sources: BLM File Data; Appendix 9 in Volume I.

[a]Local sales represent money potentially spent. They do not account for the total income that would be generated by these expenditures.

Oil and gas leases in the WSA cover 15,539 acres. At $2 per acre, lease rental fees generate up to $31,078 of Federal revenues annually. Half of these monies are allocated to the State, which then reallocates these revenues to various funds, the majority of which are related to energy development and mitigation of local impacts of energy and mineral development. No oil or gas extraction has occurred in the WSA; therefore, energy resource production from the WSA has not contributed to local employment or income. The WSA has 74 mining claims. Regulations require a $100 annual expenditure per claim for labor and improvements, an undetermined part of which is spent in the local economy. Mineral production or mine development in the Howell Peak WSA is not occurring, and there is no current financial gain due to mining.

Two livestock operators seasonally graze sheep on 1,349 AUMs of forage scattered across the two grazing allotments found in the WSA. At the fee of $1.54 per AUM, these two ranchers pay $2,077 per year in Federal revenue to graze their stock within the WSA boundaries. Marketing of livestock which use the WSA contributes to local income. About $26,980 of livestock sales, including $6,745 in ranchers' return on investment and labor, is attributed to the AUMs in the WSA.

About 10 cords of firewood per year valued at about $75 per cord could be taken from the unit.

Recreation has not proven to be a significant income producer. Exploring caves and hunting account for most of the low use in the WSA. Revenue generated by the sale of hunting licenses to people planning to specifically hunt this WSA is considered insignificant. The actual amount of income generated locally from recreational use in the WSA is unknown. However, an approximate range of expenditures can be deduced (Dalton 1982). This study indicates that Statewide average local expenditures per recreational visitor day for all types of recreation in Utah are approximately $4.10. The recreational use for the Howell Peak WSA is estimated as about 50 visitor days per year, resulting in a total estimated annual local expenditure of $205 related to the WSA.

ENVIRONMENTAL CONSEQUENCES OF ALTERNATIVES

No Action/No Wilderness Alternative

- Impacts on Wilderness Values

With the No Action/No Wilderness Alternative, none of the area would be designated wilderness, and management would be under the current Warm Spring RMP.

Since the WSA would not be designated wilderness under this alternative, the identified wilderness values would not receive the degree of protection afforded by application of the Wilderness Management Policy (BLM Manual 8560).

No development would be expected in the foreseeable future that would affect wilderness values including naturalness, outstanding opportunities for solitude on 14,880 acres, and special features (i.e., caves, fossils, geologic structures, Class A scenery, and special status plant and animal species). The only conflict with wilderness values expected in the foreseeable future is vehicular activity. Motor vehicle activity, for recreational access purposes, would continue and would generally be limited by terrain to the 7 miles of vehicular ways where it now occurs. Increased

recreational visitor use that would occur by the year 2020 (94 to 1,879 visitor use days above the current 50 visitor use days) would be expected to detract from wilderness values only where it would involve vehicular use. During the period of vehicular activity, the visual and audible disturbance would detract from opportunities for solitude and primitive recreation not only on directly disturbed areas but also on adjacent portions of the WSA. Military overflights would continue to be an occasional annoyance that would detract from opportunities for solitude and primitive recreation in the WSA.

Disturbance that would occur over the long term and, therefore, the long-term loss of wilderness values that would occur is not acurately known. Loss would occur as intrusions increase.

Conclusion: Wilderness values would not be protected by wilderness designation. No significant disturbance of wilderness values is anticipated in the foreseeable future.

- Impacts on Livestock Management

Domestic livestock grazing and management, including predator control, would continue as authorized in the Warm Springs RMP. The 1,349 AUMs currently allocated in the WSA would continue to be used by sheep owned by three livestock permittees. Additional roads or other facilities for livestock handling could be proposed and developed in the future without regard for wilderness values. No range developments exist or are proposed within the WSA. Present use of motorized vehicles on 7 miles of ways, including establishment and support of three sheep camps would continue. Few, if any, changes in livestock manage-ment techniques are expected.

Conclusion: The No Action/No Wilderness Alternative would not adversely affect livestock management or grazing levels in the WSA.

All Wilderness Alternative (24,800 Acres)

- Impacts on Wilderness Values

Wilderness designation of all 24,800 acres would preserve the area's wilderness values by providing legal constraint against development, and by management under VRM Class I (which generally allows for only natural ecological change), and by closure of the entire area to ORV use and future mineral leasing and location. Naturalness would be preserved on all 24,800 acres. Solitude would be preserved on approximately 14,880 acres that meet and 9,920 acres that do not meet the standards for outstanding solitude. The opportunities for primitive, unconfined recreation would be preserved although they are less than outstanding throughout the WSA (24,800 acres). The special features in this WSA (i.e., numerous caves, special status plant and animal species trilobite fossil beds, geologic features, and scenic values) would be preserved.

With this alternative, no loss of wilderness values would be expected in the foreseeable future. In fact, vehicular use of existing ways would cease, improving opportunities for solitude and primitive recreation. Military overflights would continue to detract from opportunities for solitude and primitive recreation.

Conclusion: Wilderness values would be preserved.

- Impacts on Livestock Management

Present domestic livestock grazing would continue as authorized in accordance with Warm Springs RMP. The 1,329 AUMs currently allocated in the WSA are used by sheep owned by three livestock permittees. Some limitations on vehicular use over 7 miles of ways may occur, and the permittees may not have ready access to three sheep camps. This would make utilization more difficult and could increase the cost of management. Predator control methods would be restricted, and increases in sheep losses to predators would result.

Because the WSA includes only 33 percent of the grazing allotments and restricted access and several predator control methods would be allowed, only minor increases in predation or changes in livestock management practices could result.

Conclusion: Restrictions on access would be an inconvenience to livestock operators. Management costs and sheep losses to predators could increase slightly.

Partial Wilderness Alternative (Proposed Action) (14,800 Acres)

- Impacts on Wilderness Values

Wilderness designation of 14,800 acres would preserve wilderness values in the WSA. Naturalness (all 14,800 acres are natural), and outstanding opportunities for solitude (all 14,800 acres that meet the

standard) would be preserved in the designated area. While there are opportunities for primitive and unconfined recreation, they are not considered outstanding. The special features of caves, trilobite beds, special status plant and animal species, geologic structures, and scenic values (496 acres) are in the designated area and would also be preserved. No development is foreseen in designated or nondesignated portions of the unit.

Continued vehicular use of 4 miles of ways in the nondesignated portion and airplane overflights would be an occasional annoyance detracting from opportunities for solitude and primitive recreation in the WSA. Disturbance that would occur over the long term in the nondesignated area, and therefore, the long-term loss of wilderness values that would occur is not accurately known. Loss would occur as intrusions increase.

Conclusion: Wilderness values would be preserved in the designated area which is about 58 percent of the WSA. No significant disturbance of wilderness values is anticipated in the foreseeable future in the nondesignated area.

- Impacts on Livestock Management

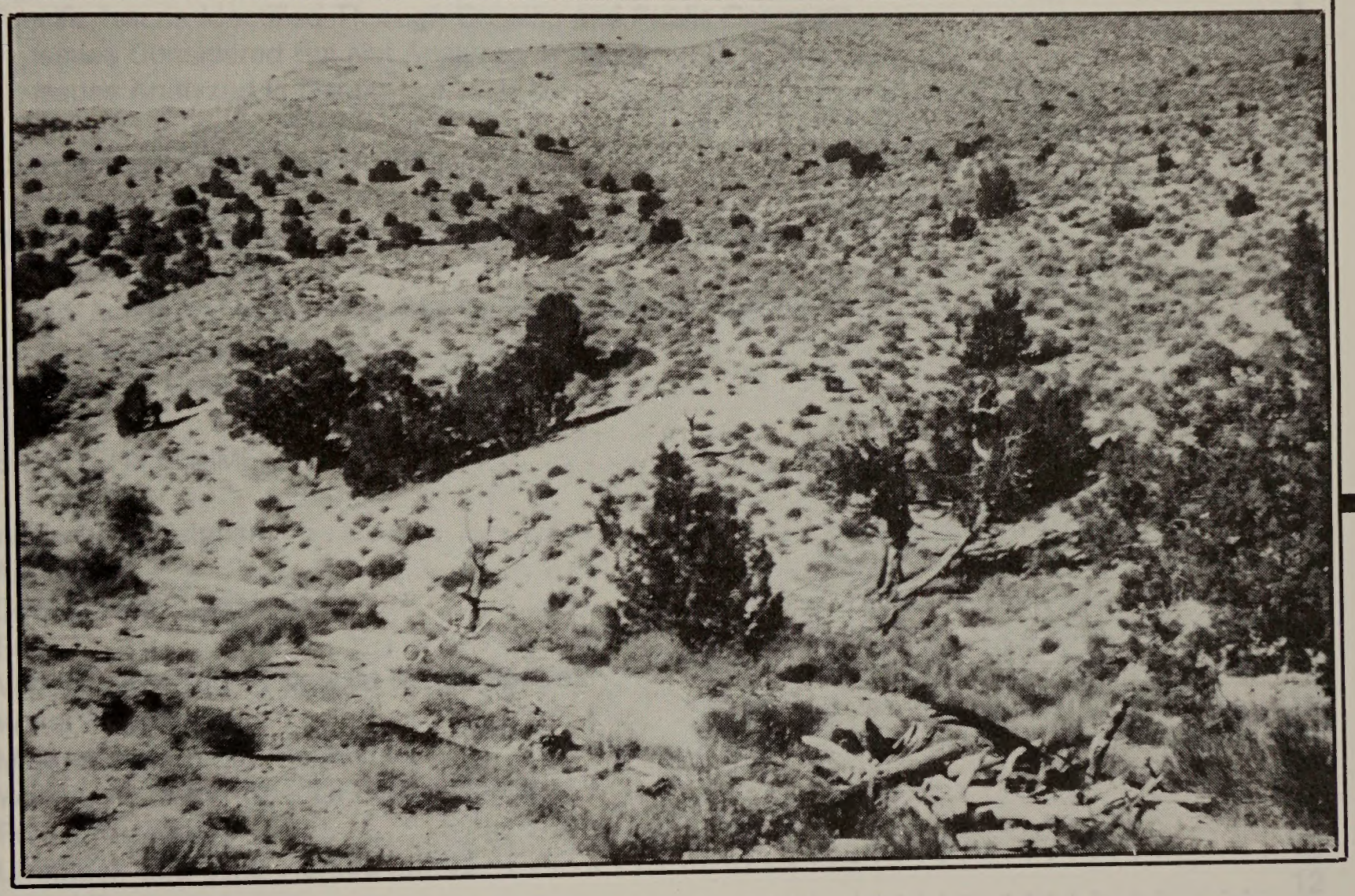
The effect of designation of 14,800 acres of the WSA as wilderness on domestic livestock grazing would be essentially the same as with the All Wilderness Alternative. Of the 1,349 AUMs allocated, 647 would be within the designated portion of the WSA and 702 within the nondesignated portion. Development of future roads or other livestock management facilities for use with 647 AUMs in the designated portion could be restricted to preserve wilderness values. Some limitations on vehicular use on 3 miles of ways in the designated area may occur and permittees may not have ready access to one of the three sheep camps in the WSA. This would make utilization more difficult and could increase the cost of management.

In the nondesignated area permittees could use 4 miles of ways and access to two of the sheep camps would be unrestricted.

Because the Partial Wilderness Alternative would designate less than 30 percent of the affected grazing allotments, and restricted access and several predator control methods would be allowed, only minor increases in predation or changes in livestock management practices would result.

Conclusion: Restrictions on access could inconvenience livestock operators. Costs of management and sheep losses to predators could increase slightly.

Conger Mountain WSA



CONGER MOUNTAIN WSA

TABLE OF CONTENTS

INTRODUCTION 1

General Description of the Area 1
Changes for the Final EIS 1
Specific Issues Identified Through Scoping and Public Comment 1
Issues Considered But Not Analyzed in Detail 1
Issues Analyzed in Detail 2

DESCRIPTION OF THE ALTERNATIVES 3

Alternatives Considered and Eliminated from Detailed Study 3
Alternatives Analyzed 3
No Action/No Wilderness Alternative (Proposed Action) 3
All Wilderness Alternative 5
Summary of Environmental Consequences 7

AFFECTED ENVIRONMENT 7

Wilderness Values 7
Air Quality 9
Geology and Topography 9
Soils 9
Vegetation Including Special Status Species 10
Water Resources 10
Mineral and Energy Resources 10
Wildlife Including Special Status Species 11
Forest Resources 12
Livestock and Wild Horses/Burros 12
Visual Resources 12
Cultural Resources 13
Recreation 13
Land Use Plans 13
Socioeconomics 14

ENVIRONMENTAL CONSEQUENCES OF ALTERNATIVES 15

No Action/No Wilderness Alternative (Proposed Action) 15
All Wilderness Alternative 16

CONGER MOUNTAIN WSA

(UT-050-035)

INTRODUCTION

General Description of the Area

The Conger Mountain WSA contains approximately 20,400 acres of public land in western Millard County. It is located about 50 miles west of Delta in west-central Utah. Foothills are generally absent, and a sharp contrast exists between the mountains and valleys. Erosion has left a series of low peaks, ledges, and slopes. The west slopes are less steep and rugged. Vegetation cover consists primarily of pinyon-juniper woodland, shadscale, cheatgrass, and sagebrush.

Great Basin climate is characterized by limited precipitation, low relative humidity, high frequency of clear skies, and large daily and annual temperature ranges. Precipitation in the Conger Mountain WSA averages about 8 inches at lower elevations to 10 inches on the higher slopes. Temperatures range from as low as -20 degrees Fahrenheit (F) in the winter to 106 degrees F in the summer.

Changes for the Final EIS

In addition to the changes noted in the Introduction to Volume II, the following changes specific to the Conger Mountain WSA have been made for the Final EIS.

1. Descriptions of the No Action/No Wilderness Alternative have been revised to coincide with the Warm Springs RMP, which has replaced the House Range MFP since publication of the Draft EIS.

2. The anticipated surface disturbance presented in the Draft EIS (286 acres) was based on the assumption that all mineral and other resources potentially within the WSA would be developed sometime in the future without consideration of technical or economic feasibility. In response to public comments relative to the feasibility of developments, the disturbance estimates have been revised to focus on activities projected to be feasible within the foreseeable future (see Appendix 6 in Volume I). This resulted in a reduction of surface disturbance estimates from the 286 acres reported in the Draft EIS to 20 acres of surface disturbance for the Final EIS.

3. The planned 2-mile pipeline in the Willow Springs area reported in the Draft EIS has been dropped from consideration by BLM and is not discussed in the Final EIS.

Specific Issues Identified Through Scoping and Public Comment

- Issues Considered But Not Analyzed in Detail

In addition to the issues discussed and eliminated from further consideration in the Introduction to Volume II (i.e., impacts on air quality, geology and topography, soils, water rights, and land use plans and policies), the following issues or impacts specific to the Conger Mountain WSA were considered but are not analyzed in detail in the Final EIS for the following reasons:

1. Vegetation Including Special Status Species: Estimates of surface disturbance without wilderness designation have been revised downward from the 286 acres reported in the Draft EIS to 20 acres of mineral-related surface disturbance in the Final EIS. Given this new scenario, the impacts of direct disturbance of vegetation would be reduced and would not be significant with any of the alternatives (less than 0.1 percent of the WSA). There are no threatened, endangered or proposed threatened or endangered plant species known to occur within the WSA. In any event, BLM would conduct site-specific clearances of potentially disturbed areas and consult with FWS concerning impacts on threatened or endangered plant species. Therefore, impacts on vegetation are not analyzed in detail for the Conger Mountain WSA.

2. Water Resources: There are no live waters or aquifers and only one spring in the Conger Mountain WSA.

3. Wildlife Including Special Status Species: The public is concerned that without wilderness designation mineral or other developments would destroy wildlife habitat and lead to reductions in wildlife populations.

STATEWIDE
POCKET MAP
WSA
NO. 8
SEE VOL.I

They are also concerned that use of ORVs would disturb wildlife and destroy habitat. The Conger Mountain WSA provides habitat for a variety of animal species, but populations are low and no one species can be described as abundant. Two endangered and seven other special status species may be found in the WSA. Only 20 acres of disturbance are expected in the WSA as a result of well drilling. Disturbance would be temporary (3 to 6 months) and wildlife habitats would not be permanently affected. There are no existing or proposed improvements for wildlife habitat. Use of ORVs is limited to the 5 miles of ways in the WSA and generally occurs in association with other recreational activities. Recreation use is low (estimated 163 visitor days use per year). Given these conditions, potential impacts on wildlife habitat and populations are not significant issues for analysis in the Final EIS.

4. Forest Resources: The only forest resources in the WSA are 12,852 acres of pinyon-juniper woodland. Demand is low and approximately 78 percent of the acreage is unsuitable for harvest because of slopes in excess of 30 percent and limited access. For these reasons, impacts on forest resources are not significant issues for analysis in the Final EIS.

5. Wild Horses: Approximately 60 wild horses use the WSA. Because wild horses would remain in the WSA with any of the alternatives and developments is not projected, impacts on wild horses are not significant issues for analysis in the Final EIS.

6. Visual Resources: As discussed above for vegetation, only 20 acres of surface disturbance are projected for the WSA in the Final EIS. Therefore, visual resources would not be significantly affected. Visual resources are not addressed in the Final EIS as a separate topic, but are addressed in relation to naturalness in the Wilderness Values sections.

7. Cultural Resources: Cultural resources could be destroyed by surface-disturbing projects, use of vehicles, or vandalism. However, only two cultural resource sites have been recorded in the WSA. Only 20 acres of mineral-related surface disturbance is projected. Visitation is light (163 visitor days per year) and vehicle use is mainly limited to the 5 miles of ways inside the WSA. Additionally, inventories for the purpose of site recordation and mitigation of impacts would take place prior to any surface disturbance in the future. Given these conditions, impacts on cultural resources are not significant issues for the Conger Mountain WSA.

8. Recreation: The public has expressed concern that wilderness designation would change recreational use from motorized to primitive or, conversely, that without wilderness designation motorized recreation will eliminate or reduce opportunities for primitive recreation. Recreational use of the Conger Mountain WSA is estimated as only 163 visitor days per year. Vehicle use is mainly restricted by terrain to the 5 miles of ways or to washes inside the WSA. Therefore, impacts on recreation use would not be significant and are not analyzed in detail in the Final EIS.

9. Economic Conditions: The public, including State and local government, is concerned that wilderness designation would preclude mineral or other economic developments and adversely affect local economic conditions. Others believe that primitive recreation use would increase following wilderness designation and would contribute to the local economy.

There are no existing or anticipated mineral developments or proposals for lands or realty activities which would be impaired with or without wilderness designation. Because no economic developments are expected, and because recreational use is only 163 visitor days per year, impacts on economic conditions are not significant issues for ananlysis in the Final EIS.

- Issues Analyzed in Detail

The significant issues for the Conger Mountain WSA are:

1. Impacts on the wilderness values of naturalness, opportunities for solitude and primitive recreation, and special features.

2. Impacts on mineral and energy resources exploration.

3. Impacts on livestock management, including predator control and vehicle access for management.

4. Impacts on Air Force operations.

Comments made during the public comment period for the Draft EIS centered mainly on the inventory phase of the wilderness review and questions on BLM's assessment of the value of wilderness vs. other resource values.

Refer to Volume VII-B for responses to general comments applicable to all WSAs and/or the Statewide

analysis and Volume VII-C, Section 8, for responses to specific comments about Conger Mountain WSA.

DESCRIPTION OF THE ALTERNATIVES

Alternatives Considered and Eliminated from Detailed Study

An alternative that would add State land acreage in the southern end of the WSA (T. 18 S., R. 17 W., sec. 36) while deleting other small areas, a net deletion of about 640 acres, was suggested by the public during the public comment period for the Draft EIS.

State land is not included in the wilderness study (refer to the response to General Comment 6.4). The proposed additions and deletions would not result in impacts appreciably different from the All Wilderness Alternative and would not offer major distinctions beyond the alternatives analyzed in the Final EIS. No additional alternatives were identified for this WSA during scoping or public comment, other than those analyzed.

Alternatives Analyzed

Two alternatives are analyzed for this WSA: (1) No Action/No Wilderness (Proposed Action); and (2) All Wilderness (20,400 acres). A description of BLM's management practices with each alternative follows. Where management intentions have not been clearly identified, assumptions are made based on management projections under each alternative. These assumptions are indicated in each case. The projected BLM management actions described in the Introduction to Volume II are also applicable.

- No Action/No Wilderness Alternative (Proposed Action)

With this alternative, none of the 20,400-acre Conger Mountain WSA would be designated by Congress as part of the NWPS. Although BLM's land use plans are regularly updated, it is projected that the area would continue to be managed in accordance with the Warm Springs RMP (USDI, BLM, 1987b). The two sections (1,280 acres) of State land in the WSA (refer to Map 1 and Appendix 3 in Volume I) have not been identified in the RMP for special Federal acquisition through exchange or purchase.

- Management Conditions and Constraints

All 20,400 acres would remain open to mineral location, leasing, and sale. Development work, extraction, and patenting would be allowed on future mining claims. There are no mining claims in the area at present. Development would be regulated by unnecessary or undue degradation guidelines (43 CFR 3809) without concern for wilderness values. There are no leases in the WSA. Future leases could be developed under Category 1 (standard stipulations) on the entire WSA. Although minerals would be managed as described above, only oil and gas exploration is projected in the foreseeable future. Oil and gas development and locatable mineral exploration or development are not projected because the level of known resources and the probability of their development are too low to support a development assumption. Refer to Appendix 6 in Volume I for an explanation of the mineral and energy resources exploration and development projections.

The present domestic livestock grazing use (an estimated 1,722 AUMs) in the WSA would continue as authorized in the Warm Springs RMP. Use of the existing spring development would continue. No additional rangeland developments are proposed. A wild horse herd of 60 animals would be maintained in the WSA.

The entire WSA acreage (including the 5 miles of existing vehicular ways) would be open to use, and new access routes for development would be allowed. Vehicular use would continue to be restricted by terrain to existing roads, ways, and washes.

Two USAF tracking stations (HAMOTS) would remain in the WSA.

The entire area would be open to woodland product harvest. There is only limited harvest of forest products at the present time. Increased harvests are not projected because of low demand and steep terrain.

The area would be managed as VRM Class IV, where changes may subordinate the landscape character, but must reflect what could be a natural occurrence in the area.

CONGER MOUNTAIN WSA

R. 17 W.

R. 16 W.

T. 17 S.

T. 18 S.

T. 19 S.

Cowboy Pass

Bench

Red

Rattlesnake

Rattlesnake Summit

Gulch

Browns

Wash

TRAIL

Cedar Pass

JEEP

Conger Mountain

Conger Spring

Willow Spring

Skunk Spr

Canyon

Camp

Ledger

Canyon

Little

Valley

1936

1800

1600

1699

1400

1581

2000

2200

2460

1889

2051

36

31

6

Map 1
LAND STATUS
Conger Mountain WSA
UT-050-035

Legend

WSA Boundary

State Land Within or Adjacent to WSA

BLM Administered Land Within or Adjacent to WSA

N

SCALE IN MILES

0 1 2

SCALE IN KILOMETERS

0 1 2 3

ELEVATION EXPRESSED IN METERS

CONGER MOUNTAIN WSA

- Action Scenario

It is projected that implementation of the No Action/No Wilderness Alternative would result in approximately 20 acres of surface disturbance in the foreseeable future. Geophysical operations would be conducted throughout the WSA to determine the possible location of oil and gas exploratory wells. It is anticipated that two wells would be drilled to determine the potential of structures beneath the WSA. The location of these wells is speculative, but it is projected that they would be drilled on the flat land areas surrounding Conger Mountain.

Up to 10 acres would be disturbed by each well and 3 miles of access road. An average of 10 employees would operate each well for a 3 to 6 month period. Each area would be reclaimed following abandonment. It is projected that 3 to 5 years would be needed for successful reclamation.

No locatable mineral exploration or development is anticipated in the WSA in the foreseeable future. No rangeland, wildlife habitat, or watershed improvement projects are planned.

The entire WSA would be available for mineral leasing (Category 1) and open to mineral location. Therefore, mineral exploration and development may occur in the long term as well as in the short term. The degree of development over the long term is unknown.

No disturbance is projected from ORV activity because of terrain constraints. Recreation use is projected to increase over the current estimated use of 163 annual visitor days at a rate of 2 to 7 percent per year. About 50 percent of the use involves vehicular access on 5 miles of existing ways.

- All Wilderness Alternative

With the All Wilderness Alternative, all 20,400 acres of the Conger Mountain WSA would be designated by an act of Congress as part of the NWPS (refer to Map 2). The WSA would be managed in accordance with BLM's Wilderness Management Policy (BLM Manual 8560) to preserve its wilderness character.

The policy of the State is to reserve its position regarding exchange of in-held lands within any particular WSA. Based on this policy, it is projected that State lands would remain under existing ownership. There are two State sections (1,280 acres) within the WSA (refer to Map 1 and Appendix 3). There are no private or split-estate lands in the WSA. The figures and acreages given with this alternative are for Federal lands only.

- Management Conditions and Constraints

After wilderness designation, all 20,400 acres would be withdrawn from mineral location and closed to new mineral leasing and sale. There are no mining claims in the WSA. Development work, extraction, and patenting would be allowed to continue on future mining claims that may be determined valid. Development would be regulated by unnecessary or undue degradation guidelines (43 CFR 3809), with consideration given to wilderness values. Exploration or development of locatable minerals is not expected because of low levels of known resources and low potential for development (see Appendix 6 in Volume I). There are no leases in the WSA and future leasing would not be allowed. Therefore, leasable mineral exploration or production would not occur.

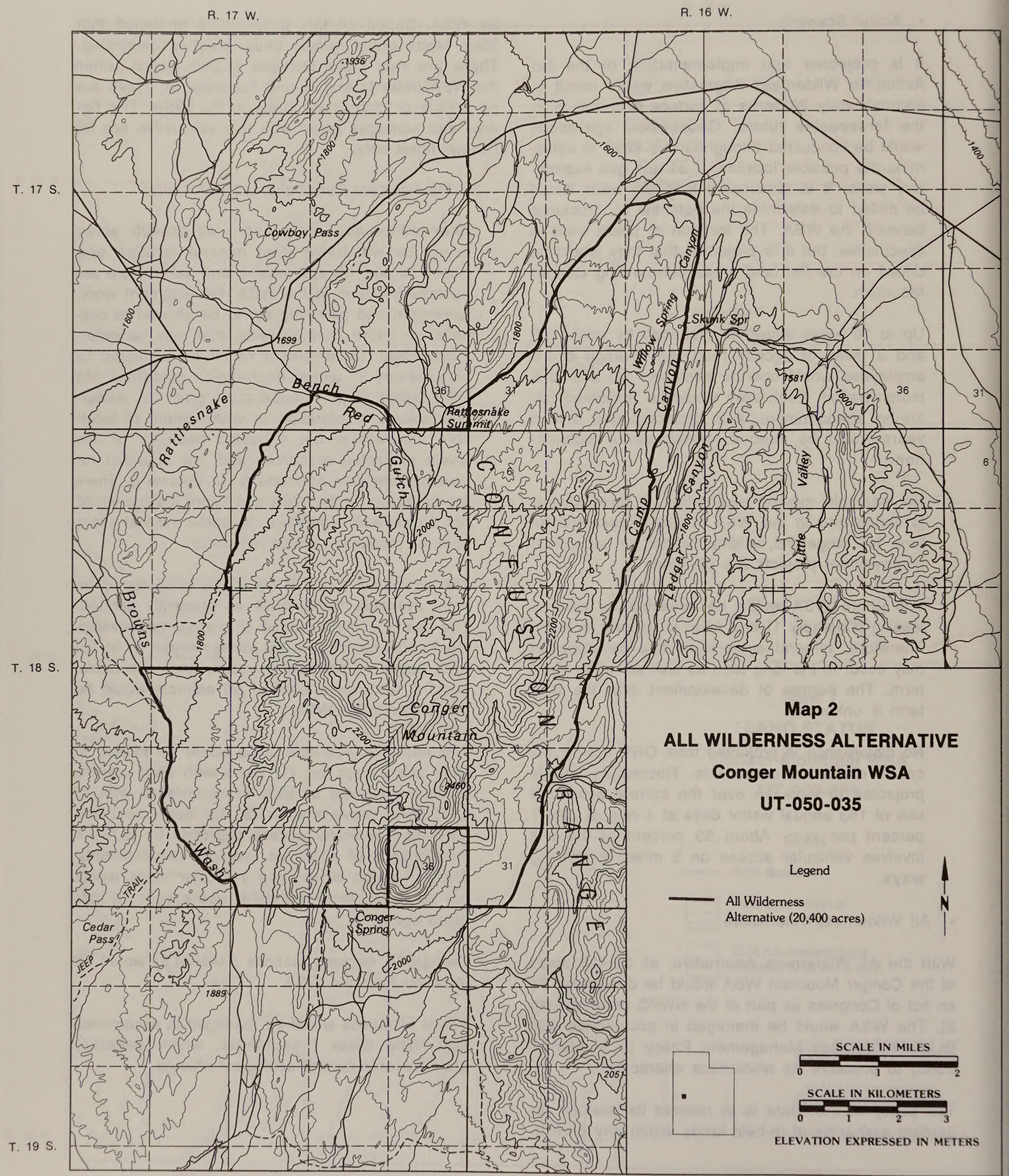
The estimated 1,722 AUMs in the WSA would remain available to livestock as presently allotted. The use and maintenance of one spring development could continue in the same manner as in the past, based on practical necessity and reasonableness. A wild horse herd of 60 animals would be maintained in the WSA.

The entire 20,400-acre area would be closed to ORV use except for: (1) users with valid existing rights if approved by BLM in accordance with 43 CFR 8560 provisions; or (2) for occasional and short-term vehicular access approved by BLM for maintenance of approved livestock developments. About 5 miles of existing vehicular ways would not be available for vehicular use except as indicated above.

Two USAF tracking stations (HAMOTS) would be removed from the WSA.

Visual resources would be managed in accordance with VRM Class I standards, which generally allow for only natural ecological change.

CONGER MOUNTAIN WSA



CONGER MOUNTAIN WSA

- Action Scenario

No surface disturbance is projected following wilderness designation. New mineral leases or mining claims would not be allowed. Therefore, no locatable or leasable mineral resource exploration or development would occur. No rangeland, wildlife habitat, or watershed improvement projects are planned following wilderness designation.

No disturbance would occur from ORV activity due to management and terrain constraints. Primitive recreation use would increase above the current use of about 82 annual visitor days at a rate of 2 to 7 percent annually.

Summary of Environmental Consequences

Table 1 presents the environmental consequences of alternatives.

AFFECTED ENVIRONMENT

This section describes the overall environmental setting. This information allows for independent assessment by the public (as required by CEQ guidelines). It also provides a data base for the cumulative Statewide analysis found in Volume I, as well as Environmental Consequences of Alternatives section for this WSA.

Unless otherwise indicated, information for this section was taken from BLM staff specialists, technical reports, and file documents.

Wilderness Values

- Size

This WSA contains approximately 20,400 acres of public land; this acreage meets the size requirements set by the Wilderness Act. The WSA is approximately 6 miles wide (east to west) and 9 miles long.

- Naturalness

Approximately 5 miles of ways within the WSA were found to be substantially unnoticeable during the BLM Intensive Wilderness Inventory. There is one spring development. The entire WSA meets the naturalness criteria for wilderness designation.

- Solitude

Topographic screening is provided by the general variety in topography. There are over a dozen small canyons penetrating the WSA from the perimeter that shield hikers from the sights and sounds of others. Elevations within the WSA vary between 5,200 and 8,100 feet. Vegetation adequate to provide screening is relatively sparse in most of the WSA, with pinyon-juniper found only above the 7,000-foot level. Approximately 70 percent of the WSA (14,280 acres) meets the standard for outstanding opportunities for solitude set by the Wilderness Act. The Cowboy Pass road to the north would be visible from within the WSA, and the sights and sounds of traffic adversely affects solitude; however, this road is lightly traveled.

Approximately 30 percent (6,120 acres) of the WSA does not have outstanding opportunities for solitude because of sparse, low-growing vegetation and relatively flat topography.

The Conger Mountain WSA is within the South Range of the USAF's Utah Test and Training Range. The South Range runs approximately north to south from the southern boundary of the Bonneville Salt Flats to the San Francisco Mountains and east to west from the Sheeprock Mountains to 17 miles within Nevada. This is one of the nation's busiest military air spaces. There are 15,000 aircraft including all types of tactical fighters and bombers in the area. Approximately 100 to 150 (conservative estimate) aircraft flights occur per day over the South Range 6 days per week. Flights occur as low as 100 feet above the ground surface. Speeds are subsonic except in the very northern portion of the test range in the area around Ibapah, where supersonic speeds are also reached. Heaviest use areas are in the northern part of the test range but occasional use occurs in the vicinity of the Conger Mountain WSA (Davies, .1985). Aircraft occasionally fly directly over the WSA, and these overflights can be a source of annoyance to visitors seeking solitude. Most of these overflights are not directly over the WSA and are subsonic in this area. Military flights are occasional off-site intrusions (sight and sound) that detract from, but do not eliminate, the overall opportunities for solitude.

- Primitive and Unconfined Recreation

As discussed in the Recreation section, no activities were found to have outstanding opportunities. The quality of recreational opportunities overall in the

CONGER MOUNTAIN WSA

Table 1
Summary of Environmental Consequences

Resource	Alternatives No Action/No Wilderness (Proposed Action)	 All Wilderness (20,400 Acres)
Impacts on Wilderness Values	Wilderness values would not be protected by wilderness designation and loss would occur as intrusions increase. In the foreseeable future, wilderness values would be directly lost on 20 acres and indirectly reduced in quality on up to 3,060 acres of the WSA due to mineral exploration. Continued vehicular use would detract from opportunities for solitude and primitive recreation. Special features would not be significantly affected.	Wilderness values of naturalness, opportunities for solitude and primitive recreation, and special features would be preserved.
Impacts on Mineral Exploration	Mineral and energy exploration or development would not be adversely affected because they would be available for exploration and development as at present.	Exploration opportunities for potential oil and gas would be lost or severely constrained. The potential for production in the foreseeable future is low, however, and wilderness designation would not result in a significant loss.
Impacts on Livestock Management	Livestock grazing would not be affected because management and access would continue as at present.	Restrictions on vehicular use and predator control would inconvenience livestock permittees. Management costs would increase.
Impacts on Air Force	Air Force operations would not be affected.	Removal of two HAMOTS stations would require alternate sites and redesigning of the Air Force tracking system grid.

CONGER MOUNTAIN WSA

WSA is less than outstanding and does not meet the standards for opportunities for primitive, unconfined recreation as set by the Wilderness Act.

- Special Features

The only special feature identified during BLM Intensive Wilderness Inventory is the herd of 60 wild horses that roam in the WSA. While many areas in the western states have wild horse herds, actual sightings by the casual visitor are a relatively rare occurrence.

The WSA has resource values that, although not identified as such during the wilderness inventory, could be considered special features. There are two animal species (bald eagle and peregrine falcon) listed as endangered or threatened. There are seven other special status animal species and one special status plant species located in the WSA. Refer to the Vegetation and Wildlife Including Special Status Species sections for additional information.

- Diversity

This WSA is in the Intermountain Sagebrush Province Ecoregion and has the PNV types of juniper-pinyon woodland and saltbrush-greasewood. Refer to the Vegetation Including Special Status Species section for more discussion on ecoregions and PNV types. The ecoregion and PNV types represented by this WSA are compared with existing and other potential NWPS units in the Wilderness Values section in Volume I.

This WSA is within a 5-hour drive from three standard metropolitan statistical areas. These are Salt Lake City-Ogden, Utah; Provo-Orem, Utah; and Las Vegas, Nevada.

Air Quality

Air quality in the WSA is generally good to excellent. The Conger Mountain WSA is in a PSD Class II area under the provisions of the Clean Air Act as amended. Panoramas of the Great Basin blockfaulted mountains are greatly enhanced by the generally excellent air clarity. The WSA is in an area with the highest visual range (70+ miles) in the United States (EPA, 1979).

Geology and Topography

The Conger Mountain WSA is in west-central Utah, in the eastern portion of the Basin and Range Physiographic Province. This area varies in elevation from 5,200 to 8,070 feet and is characterized by a series of generally north-south trending blockfaulted mountain ranges and sedimentary basins. Numerous Cenozoic volcanic features (often associated with blockfaulting) are present and also constitute prominent landforms. Conger Range is an average example of the blockfaulted mountains characteristic of the Great Basin. This current topography, however, represents only a late state in the geologic history of the area. Prior to Basin and Range faulting, the rocks of this region were folded, faulted, and thrust eastward by compressional forces from the west. Thousands of feet of generally shallow water carbonates and clastics were deposited here. A major uplift during the Mesozoic (Sevier orogeny) stripped away deposits as old as Ordovician from western Utah. Exposed bedrock in the WSA consists mostly of carbonate rocks of Mississippian and Pennsylvanian ages, with some Mesozoic sediments (Hintze, 1985). High angle faults and thrust faults are abundant and well exposed throughout the area. The WSA's topography is an average example of Basin and Range relief. The Confusion Range rises above the surrounding valleys, trending generally north to south along blockfault planes. Because these are blockfaulted mountains, foothills are generally absent, and a moderate contrast exists between mountains and adjacent valleys.

Soils

There are two general soil associations in this WSA. One association is comprised of soils with shallow, moderate to strongly alkaline and extremely cobbly, loam, clay loam, and silt loam textures. They are developed from residuum from igneous and sedimentary material. The other is comprised of very deep, gravelly loams, sandy loams, and loamy sands. They are calcareous, moderately alkaline, and formed in alluvium derived dominantly from limestone.

The entire 20,400 acres within the WSA are in the slight erosion condition class with no serious erosion problems. Erosion condition class is based on soil surface factors (refer to the Glossary). Normal annual soil loss in this condition class would approximate 12,240 cubic yards or 0.6 cubic yard per acre. Reclamation potential varies from site to site. Generally, the areas with strongly alkaline cobbly loam soils have lower reclamation potential than do the sandy or silt loams. Areas dominated by sagebrush and grasses have greater reclamation potential than do the steeper slopes dominated by pinyon-juniper.

Vegetation Including Special Status Species

The Conger Mountain WSA is within the Bonneville Basin section of the Great Basin Division of the Intermountain Region (Cronquist, Holmgren, Holmgren, and Reveal, 1972). In general, the vegetation is typical of the other mountain ranges in the basin. Existing vegetation types found in the WSA are shown in Table 2. The only riparian vegetation in the WSA is associated with Willow Springs.

Table 2
Existing Vegetation Types

Existing Vegetation Type	Acres	Percent of WSA
Utah Juniper	12,852	63
Shadscale, horsebrush-cheatgrass	2,040	10
Sagebrush	5,508	27
Total	20,400	100

Source: USDI, BLM, 1987b

No threatened or endangered plant species are known to occur in the WSA. Cryptantha compacta, a Category 2 candidate plant species, possibly occurs in the WSA. Refer to Appendix 4 in Volume I for further information.

The Conger Mountain WSA is located in the Intermountain Sagebrush Province Ecoregion as shown on the Bailey-Kuchler ecosystems map (USDI, USGS, 1978). The PNV types of the WSA are listed on Table 3.

Table 3
Potential Natural Vegetation Types

PNV Type	Acres	Percent of WSA
Pinyon-juniper woodland	14,688	72
Saltbush-greasewood	5,712	28
Total	20,400	100

Source: USDI, USGS, 1978.

Water Resources

Willow Springs is the only water source within the WSA. It has been developed by BLM and produces a low volume of water. Skunk Spring and Conger Spring, located adjacent to and near the WSA, respectively, have also been developed by BLM. Table 4 shows flow and present use for these three springs. Water quality standards have not been set for these springs. Until standards are set, BLM will manage them as Class 4, which protects water quality for stockwatering purposes. This WSA is located in the western Great Salt Lake subbasin of the Great Basin hydrologic region. It is relatively dry. The State Engineer has declared all perennial water sources in the area as fully appropriated (UDNRE, DWR, 1988). However, intermittent washes are open to appropriation. Each application would be examined for possible interference problems and speculative nature. No applications for washes in the WSA are pending.

Table 4
Water Availability

Spring	Flow in Gallons Per Minute	Use
Willow	1-2	Wild horses, antelope, and sheep
Skunk[a]	3-4	Wild horses, antelope, and sheep
Conger[a]	7-8	Wild horses, antelope, and sheep

Source: BLM File Data.

[a]Located outside the WSA.

Mineral and Energy Resources

Refer to Appendix 5 in Volume I for a detailed description of the SAI rating system. The energy and mineral resources rating summary is given in Table 5.

Table 5
Mineral and Energy Resource Rating Summary

Resource	Rating: Favorability[a]	Rating: Certainty[b]	Estimated Resource
Oil and Gas	f 2	c2	Less than 10 million barrels of oil; less than 60 billion cubic feet of gas
Uranium	f 1	c1	Little to none
Geothermal	f 2	c1	Low temperature resource
Beryllium	f 2	c1	Less than 10 metric tons
Lead/Zinc	f 2	c1	Less than 50,000 metric tons
Tungsten	f 2	c1	Less than 500 metric tons

Source: SAI, 1982; USDI, BLM 1987d.

[a]Favorability of the WSA's geologic environment for a resource (f1 = lowest favorability or smallest size deposit; f4 = highest favorability or largest size deposit).

[b]The degree of certainty that the resource does or does not exist within the WSA (c1 = lowest and c4 = highest).

The WSA could contain deposits of beryllium, lead, zinc, and tungsten that are currently listed as strategic and critical materials (USDoD, 1988).

- Leasable Minerals

There are no known deposits of leasable minerals in the WSA. There are no current exploration, drilling, or mining activities for leasable minerals occurring in the WSA.

- Oil and Gas

Based on geographic location, this WSA has a geologic favorability for occurrences of small deposits of oil and gas. It has, therefore, been rated f2, and has a potential for less than 10 million barrels of oil or less than 60 billion cubic feet of natural gas (SAI, 1982). Because of the geologic structure and hydrocarbon maturity (Molenaar et al., 1983; USDI, BLM, 1987d), there is a low degree of certainty (c2) for the deposit to exist. Currently, there are no oil and gas leases in the WSA. The entire WSA is in oil and gas leasing Category 1, open to leasing with standard stipulations.

- Geothermal

A favorability for small, low-temperature geothermal occurrences (f2) exists with a very low degree of certainty (c1). Because of the low temperatures, this resource could probably be used only for direct heating, and most likely would be uneconomic to extract. There are no geothermal leases in the WSA.

- Locatable Minerals

There are no known deposits of locatable minerals existing in the WSA. Potential is difficult to determine because little or no exploration has occurred. Currently there are no mining claims in the WSA.

- Beryllium, Tungsten, Lead, and Zinc

The carbonate host rocks and blockfaulting provide a favorable environment for small-sized deposits (f2) with a very low degree of certainty (c1) for tungsten, beryllium, lead, and zinc. Up to 50,000 metric tons of lead and zinc, and 500 metric tons of tungsten could occur within the WSA. Associated minerals could include gold, silver, and copper in minor amounts.

- Uranium

There is a less than favorable (f1) environment for uranium deposits, with a very low (c1) degree of certainty.

- Salable Minerals

There are no commercial deposits of salable minerals in the WSA. There are scattered deposits of sand, gravel, and limestone. However, sand and gravel are common in the area, and there are deposits closer to existing and possible future market areas. Low prices, high transportation costs, and large Statewide reserves usually limit these materials to local markets. Generally, no demand is foreseen for salable minerals in the WSA.

Wildlife Including Special Status Species

The Conger Mountain WSA provides habitat for a variety of animal species. There are 51 mammal species, 103 bird species, 14 reptile species, and one amphibian species that inhabit the area at different times of the year. Although a great diversity exists, no one species could be described as abundant.

There are approximately 10 deer and 15 antelope found in the WSA year-round; 20 deer are found in the WSA during the winter only.

There is no Federally designated critical habitat inside the WSA boundaries. There are approximately 16,000 acres of high priority winter range for mule deer (Herd Unit 62B) and 1,800 acres of high priority yearlong habitat for pronghorn antelope (West Desert Herd Unit). In addition, there are 1,900 acres of yearlong habitat for chukar partridge inside the WSA. These habitats are lightly used at the present time because of low population numbers.

Two endangered species, bald eagle and peregrine falcon, and one BLM sensitive species, golden eagle, are found in the WSA. Six Category 2 candidate species could occur in the WSA. These are the ferruginous hawk, long-billed curlew, Swainson's hawk, western snowy plover, white-faced ibis, and the Swasey Spring pocket gopher. With the exception of the Swasey Spring gopher, these species are birds that frequent areas throughout the Great Basin and other parts of the western United States. Refer to Appendix 4 in Volume I for details.

Most of the area inside the WSA is considered crucial yearlong habitat for the golden eagle. This indicates that golden eagles may nest inside the WSA. A major raptor nesting area is located outside, but adjacent to the northeastern boundary of the WSA.

There are no existing wildlife improvements within the WSA and none are planned.

Forest Resources

There are approximately 12,852 acres identified as woodland vegetation type within the WSA, predominantly juniper with some pinyon pine. Of that total, approximately 10,000 acres are unsuitable for harvest operations because of slopes in excess of 30 percent, which prohibit economic recovery of the resource. The 2,852 suitable acres could produce about 26,254 cords of fuelwood and 2,568 fence posts. No commercial demand for woodland products has been demonstrated in the WSA. There is no record of any commercial use being made of the woodland products in this area nor have there been any permits issued for woodland products from BLM's office. Some limited harvesting has taken place by local ranchers.

Livestock and Wild Horses/Burros

Portions of two sheep allotments are within the WSA. Seventy to eighty percent of the WSA is usable by livestock and provide an estimated 1,722 AUMs. Refer to Table 6 for allotment information.

Improvements consist of one spring development in the Skunk Springs allotment. No additional range improvements are proposed. There are several existing ways used extensively by livestock operators for access to sheep camps and hauling water. Ten sheep camps are located inside or along the boundaries of the WSA. Four sheep campsites are located within the portion of the WSA that overlaps the Browns Wash allotment. One of these is about 0.5 mile inside the WSA and three are along the western boundary. Six camp locations are in the Skunk Springs allotment portion of the WSA. Three are along the eastern and northern boundary, two along existing ways approximately 1.5 miles into Red Gulch, and one is in T. 18 S., R. 16 W., sec. 5. BLM also uses ways to supervise livestock operations and conduct range studies.

APHIS conducts predator control in BLM grazing allotments that comprise the WSA. In 1986 two coyotes were taken by fixed-wing aircraft from the allotments in and surrounding the WSA (USDA, APHIS 1988). The WSA comprises 24 and 59 percent of the area of the two allotments. It is not known if the predators were actually taken within the WSA. There were no confirmed livestock losses for 1986 in these allotments.

There are approximately 60 wild horses whose use is well distributed throughout this WSA. BLM plans to maintain about 70 wild horses in the Conger Mountains.

Visual Resources

The north and west slopes of the WSA are gently rolling tan hills dotted with dark-green juniper and scattered pinyon trees. The southern and eastern slopes are much steeper, with light-gray limestone outcrops. Pinyon-juniper woodland is interspersed along the lower slopes and on the plateau above the outcrop.

Table 6
Livestock Grazing Use Data

Allotments	Total Acres	Acres in WSA	Total AUMs	Number of AUMs in WSA	Number and Kind of Livestock	Season of Use	Number of Operators
Skunk Spring	37,661	8,970	1,540	801	22 Cattle 1,362 Sheep	05/16-10/15 11/09-04/15	2
Browns Wash	26,112	15,430	2,608	921	2,608 Sheep	11/01-03/31	1
Total	63,773	24,400	4,148	1,722			3

Sources: USDI, BLM, 1987b.

CONGER MOUNTAIN WSA

Ninety-seven percent (19,788 acres) of the WSA is Class B scenery. This rating is based on the variety in landform, vegetation, and color. The remaining 3 percent (612 acres) of this WSA is Class C scenery. These lands consist primarily of flats and benchlands, having little variation in landform, color, or vegetation. The entire WSA is rated as VRM Class IV, where changes may subordinate the landscape character, but must reflect what could be natural occurrence in the area.

Cultural Resources

There has been no cultural resource inventory conducted in the WSA. As of 1988, BLM cultural resource site maps and records show that two prehistoric sites have been recorded in adjacent areas but no sites are known to occur inside the WSA. The WSA has a medium potential for camp and cave sites and good potential for finding sites associated with hunting and wild-food gathering.

There are no known potential National Register sites or nominations in the WSA.

Ranchers and sheepherders have long used the WSA; however, there are no recorded historical sites.

Recreation

The Conger Mountain WSA is a remote mountain range in the West Desert. Recreation resources and subsequent recreation use are limited. There are approximately 163 visitor days of use attributed to recreation in the area. Of these, 98 visitor days are attributed to hunting, 33 days to collecting of fossils, and 32 days to zoological sightseeing (primarily wild horses). ORV use is restricted by steep terrain and topography to the existing 5 miles of ways and generally occurs in association with other recreational activities. As much as 50 percent of the use involves vehicular access.

There are no recreation facilities in or adjacent to the WSA. Roads that form the WSA boundaries provide access to the area. In addition to the ways, there are numerous livestock and wild horse trails that can be used for access.

Fifteen recreational opportunities were evaluated for their quality in the WSA. Thirteen recreational opportunities were found to exist in varying degrees. No activities were found to have outstanding quality. Rockhounding, horseback riding, and wildlife observation were determined to be of average quality. The remaining 10 recreational activities considered were determined to have below average quality due to one or more of the following reasons: size and configuration of the area, lack of water, lack of destinations and distinctive features, low scenic quality, or minimal wildlife numbers.

Land Use Plans

The WSA is BLM-administered public land except for two State sections (1,280 acres). There are no private or split-estate lands in the WSA. The current policy of the State is to maximize economic returns from State lands and to reserve its position regarding exchange of in-held lands (see Chapter 1 in Volume I). In 1986, the Utah State Legislature passed S.C.R. No. 1 opposing any additional wilderness designation in Utah and urging that State lands not be exchanged out of wilderness areas. Both in-held State sections are under grazing permits, and grazing is the only current activity on these lands.

The Millard County Master Plan (Paul Nelsen Associates, Inc., 1981) does not specifically address wilderness. The county believes that Federal lands in the county should be generally utilized to their greatest economic potential under a multiple-use concept.

The Millard County Commission has endorsed the Consolidated Local Government Response to Wilderness (Utah Counties, 1986) that opposes wilderness designation of BLM lands in Utah.

The current BLM planning document for the Conger Mountain WSA is the Warm Springs RMP (USDI, BLM, 1987b). Wilderness is not addressed in the Warm Springs RMP. However, wilderness designation is part of BLM multiple-use concept. The BLM land use plan is linked to the Statewide Wilderness EIS through inclusion of the present plan as the No Action/No Wilderness Alternative.

The Conger Mountain WSA is in the South Range of the USAF's Utah Test and Training Range. The Air Force's (1987) position is that low-level military overflights of the Utah Test and Training Range, including the Conger Mountain WSA, would continue with or without wilderness designation.

There are two USAF HAMOTS sites in the central part of the WSA. HAMOTS facilities consist of 24-foot high antennas with associated braces, solar panels,

and batteries. HAMOTS provides for radar-tracking of air launched cruise missiles. There are several such sites in the Utah Test and Training Range (western Utah and eastern Nevada). Rights-of-way for the facilities were issued in 1985. The temporary rights-of-way were issued for up to 3 years, and can be renewed. Access to the HAMOTS sites is limited to walking or by helicopter. The facilities are considered to be nonimpairing under interim wilderness management, but BLM has stipulated that they would be removed if the WSA is designated wilderness.

Socioeconomics

- Demographics

The Conger Mountain WSA is located in Millard County approximately 50 miles west of Delta, Utah.

From 1970 to 1980, the population of Millard County grew by approximately 28.4 percent to 9,050. A major portion of the Millard County population lives in Delta and Fillmore. Table 7 presents baseline and projected population data for Millard County. It is estimated that between 1980 and 1987, the population increased to about 10,415. Population projections for the county indicate that the number of people living in Millard County in the year 2010 will be about 12,900 for about a 43-percent increase over 1980 levels (Utah Office of Planning and Budget, 1987).

Table 7
Baseline and Projected Population and Employment Growth
Millard County

	1980	1990	2000	2010
Population	9,050	11,000	11,600	12,900
Employment	3,645	5,500	6,000	6,700

Source: Utah Office of Planning and Budget, 1987.

- Employment

Table 7 shows the baseline and projected total employment growth for the county to the year 2010. The government sector (Federal, State, and local) is the most important in terms of employment in the Millard County economy. Farm employment makes up about 26 percent of the total employment in the county. The Intermountain Power Project contributes significantly to employment, while mining has been declining in recent years.

Millard County is part of the Central MCD. Table 8 shows the baseline (1980) and projected employment by source for MCD to the year 2010. In 1980, the leading employment sectors for the MCD were government (21 percent), agriculture (20 percent), and trade (14 percent). Mining provided approximately 4 percent of the direct employment in the MCD. It is projected that by the year 2010, employment in the MCD will increase by approximately 58 percent. Trade will incrrease to 17 percent and services to 12 percent of the total, while government will decline to 17 percent, agriculture to 11 percent, and mining to 3 percent of the total.

Table 8
Central Multi-County District
Employment[a]

	1980	1990	2000	2010
Agriculture	3,649	3,500	3,600	3,800
Mining	706	700	800	900
Construction	822	1,400	2,200	2,200
Manufacturing	2,047	1,900	2,200	2,600
Transportation, Utilities	589	1,300	1,400	1,500
Trade	2,604	3,400	4,000	4,900
Finance, Insurance, Real Estate	347	400	500	600
Services	1,439	2,300	2,900	3,500
Government	3,919	4,100	4,100	4,900
Nonfarm Proprietors	2,278	2,800	3,300	4,100
Totals	18,400	21,800	25,000	29,000

Source: Utah Office of Planning and Budget, 1987.

[a]Includes Juab, Millard, Piute, Sanpete, Sevier, and Wayne Counties.

- Sales and Revenues

Economic-related activities in the WSA include livestock production and recreation. Table 9 summarizes local sales and Federal revenues from the WSA. Appendix 9 in Volume I identifies the multipliers used to estimate sales and revenues.

Table 9
Sales and Revenues

Source	Estimated Annual Local Sales[a]	Estimated Annual Federal Revenues
Oil and Gas Leases	0	0
Mining Claim Assessment	0	0
Livestock Grazing	$34,440	$2,652
Recreational Use	$668	0
Total	$35,108	$2,652

Sources: USDI, BLM, 1982a; Appendix 9 in Volume I.

[a]Local sales represent money potentially spent. They do not account for the total income that would be generated by these expenditures.

Four livestock operators have a total grazing privilege of 1,722 AUMs within the WSA. If all this forage

were utilized, it would account for $34,440 of livestock sales and $8,610 of ranchers' returns to labor and investment. Some woodland products are harvested from the WSA; however, the harvests have been small and are insignificant to the local economy and only of minor significance to those involved in the harvest.

The actual amount of income generated locally from recreational use in the WSA is unknown. However, an approximate range of expenditures can be deduced (Dalton 1982). This study indicates that the Statewide average local expenditures per recreational visitor day for all types of recreation in Utah are approximately $4.10. The recreational use for Conger Mountain WSA is estimated as about 163 visitor days per year.

The WSA also generates Federal revenues from livestock (refer to Table 9). Average actual livestock use and, therefore, revenues generated from grazing in the WSA are unknown; however, the permittees in the WSA can use up to 1,722 AUMs per year. Based on a $1.54 per AUM grazing fee, the WSA can potentially generate $2,652 of grazing fee revenues annually, 50 percent of which would be allocated back to the local BLM District for the construction of rangeland improvements.

ENVIRONMENTAL CONSEQUENCES OF ALTERNATIVES

This section describes the environmental consequences of implementing the alternatives. The analysis is based on the BLM management actions and anticipated activities presented in the Introduction to Volume II and the Description of the Alternatives for the Conger Mountain WSA.

No Action/No Wilderness Alternative (Proposed Action)

The major changes that could occur in the area would be related to oil and gas, geothermal, and locatable mineral exploration and development. The area would be open to resource use and development without controls for wilderness protection.

- Impacts on Wilderness Values

Because the WSA would not be designated wilderness with this alternative, the wilderness values would not receive the protection afforded by application of the Wilderness Management Policy (BLM Manual 8560).

Disturbance of approximately 20 acres from leasable mineral exploration is likely in the foreseeable future and would cause a direct loss of naturalness, solitude, and opportunities for primitive, unconfined recreation in the disturbed areas. The special features of wild horses and endangered and sensitive species would not be affected because only 0.1 percent of the WSA would be directly disturbed, disturbance would be temporary (3 to 6 months), and mitigating measures would be applied.

During the period of activity, visual and audible disturbance from mineral exploration and vehicle use would reduce opportunities for solitude and primitive recreation not only on directly disturbed areas but also indirectly on adjacent portions of the WSA. As much as 15 percent (3,060 acres) of the WSA would be affected in this manner in the foreseeable future. The areas that would be affected would most likely be the flatland areas surrounding Conger Mountain and are considered by BLM to have less than outstanding opportunities for solitude and primitive recreation.

Sights and sounds from continued vehicle use of 5 miles of ways would detract from opportunities for solitude and primitive recreation during the period of use. Conger Mountain is not an ORV destination area and because of this and terrain constraints, little additional ORV disturbance is anticipated. Areas where vehicular ways exist or could be developed are generally not considered by BLM to have outstanding opportunities for solitude and primitive recreation. The special features of wild horses and special status species would not be affected due to the limited amount of ORV use expected.

Overflights by military aircraft would continue to be an occasional annoyance that would detract from the opportunities for solitude and primitive recreation in the WSA.

The extent to which disturbance would occur over the long term and, therefore, the long-term loss of wilderness values that would occur is not accurately known. Loss would occur as intrusions increase.

Conclusion: Wilderness values would not be protected by wilderness designation, and loss would occur as intrusions increase. In the foreseeable future, naturalness and opportunities for solitude and primitive recreation would be directly lost on 20 acres and

opportunities for solitude and primitive recreation would be indirectly reduced in quality on up to 3,060 acres. Special features would not be significantly affected.

- Impacts on Mineral and Energy Exploration

With the No Action/No Wilderness Alternative management of mineral resources and opportunities for exploration and development would not change from the present situation. The WSA would remain open to mining claim location and mineral production. New leases could be issued subject to Category 1 stipulations. Salable minerals would be open for development.

Conclusion: Implementation of the No Action/No Wilderness Alternative would not adversely affect mineral and energy exploration.

- Impacts on Livestock Management

Present livestock use of an estimated 1,722 AUMs and maintenance of the developed spring could continue. No additional range improvements are planned. Existing roads and ways could continue to be used to manage livestock and to establish and supply the 10 sheep camps in and surrounding the WSA. Additional roads or other facilities for livestock handling could be proposed and developed in the future without regard for wilderness values. Predator control would continue under State law and APHIS regulations. Therefore, few, if any, changes in livestock management including predator control are expected.

Conclusion: The No Action/No Wilderness Alternative would not adversely affect livestock management in the WSA.

- Impacts on Air Force Operations

Two USAF HAMOTS facilities would be allowed to remain in the WSA. Therefore, the No Action/No Wilderness Alternative would not affect Air Force operations.

Conclusion: The No Action/No Wilderness Alternative would not affect Air Force operations.

All Wilderness Alternative (20,400 Acres)

- Impacts on Wilderness Values

Designation and management of all 20,400 acres as wilderness would preserve the wilderness values in the Conger Mountain WSA. The potential for surface-disturbing activities would be reduced through closure of the entire area to future mineral leasing and location and to ORV use. The area would also be managed as VRM Class I, which allows for only natural ecological change.

Naturalness would be protected on all 20,400 acres. Solitude would be protected on approximately 14,280 acres that meet and 6,120 acres that do not meet the standards for outstanding opportunities. Primitive and unconfined recreation would be protected on 20,400 acres that do not meet the standard for outstanding opportunities. Special features in the WSA, including wild horses and special status species, would also be protected by wilderness management provisions.

No disturbance that would affect wilderness values would be expected with this alternative. In addition, vehicular use of 5 miles of ways would cease and no longer detract from opportunities for solitude and primitive recreation.

Overflights by military aircraft would continue to be an occasional annoyance that would detract from the opportunities for solitude and primitive recreation in the WSA.

Conclusion: Wilderness values would be preserved.

- Impacts on Mineral and Energy Exploration

  - Leasable Minerals

    There are no oil and gas leases in the WSA; therefore, no exploration or development of oil and gas is presently occurring and new leases would not be issued. There are no known occurrences of leasable minerals in the WSA. The certainty for the occurrence of oil and gas resources is rated as low (c2). Due to the expected small size of the potential deposits, it is concluded that this alternative would not result in a significant loss of potential oil and gas recovery in the foreseeable future.

Because there is only a low potential for economic development of geothermal energy in the WSA, even without wilderness designation, there would not be a significant impact to the geothermal resource with this alternative.

- Locatable Minerals

There are no known commercial deposits of any locatable minerals in the WSA. Potential for their occurrence is low and no mining claims are presently located in the WSA. A possibility does exist that locatable minerals are in the WSA.

If claims are not filed prior to wilderness designation, this alternative would prevent any exploration for or development of the potential resource. However, the potential for production is considered low in the foreseeable future, and implementation of this alternative would not have a significant impact on the production of locatable minerals.

- Salable Minerals

No interest has been expressed in developing salable minerals in the WSA. Because more favorable deposits are located elsewhere in the State, no loss of salable mineral production is projected for this WSA.

Conclusion: Wilderness designation would eliminate or severely constrain exploration opportunities for potential oil and gas in the WSA.

- Impacts on Livestock Management

Present domestic livestock grazing would continue as authorized in accordance with the Warm Springs RMP. The 1,722 AUMs currently allocated in the WSA are controlled by three livestock permittees. Vehicles are used frequently during the grazing season to manage livestock and supply the 10 sheep camps in and along the boundaries of the WSA. Some limitations on vehicular use may occur, and sheep camps may not have ready access. This could be inconvenient for permittees and result in increased costs of management.

Predator control would be restricted, and increases in sheep losses to predators would result. Increases would probably be slight because there were no confirmed livestock losses in 1986, and several methods of predator control would be allowed.

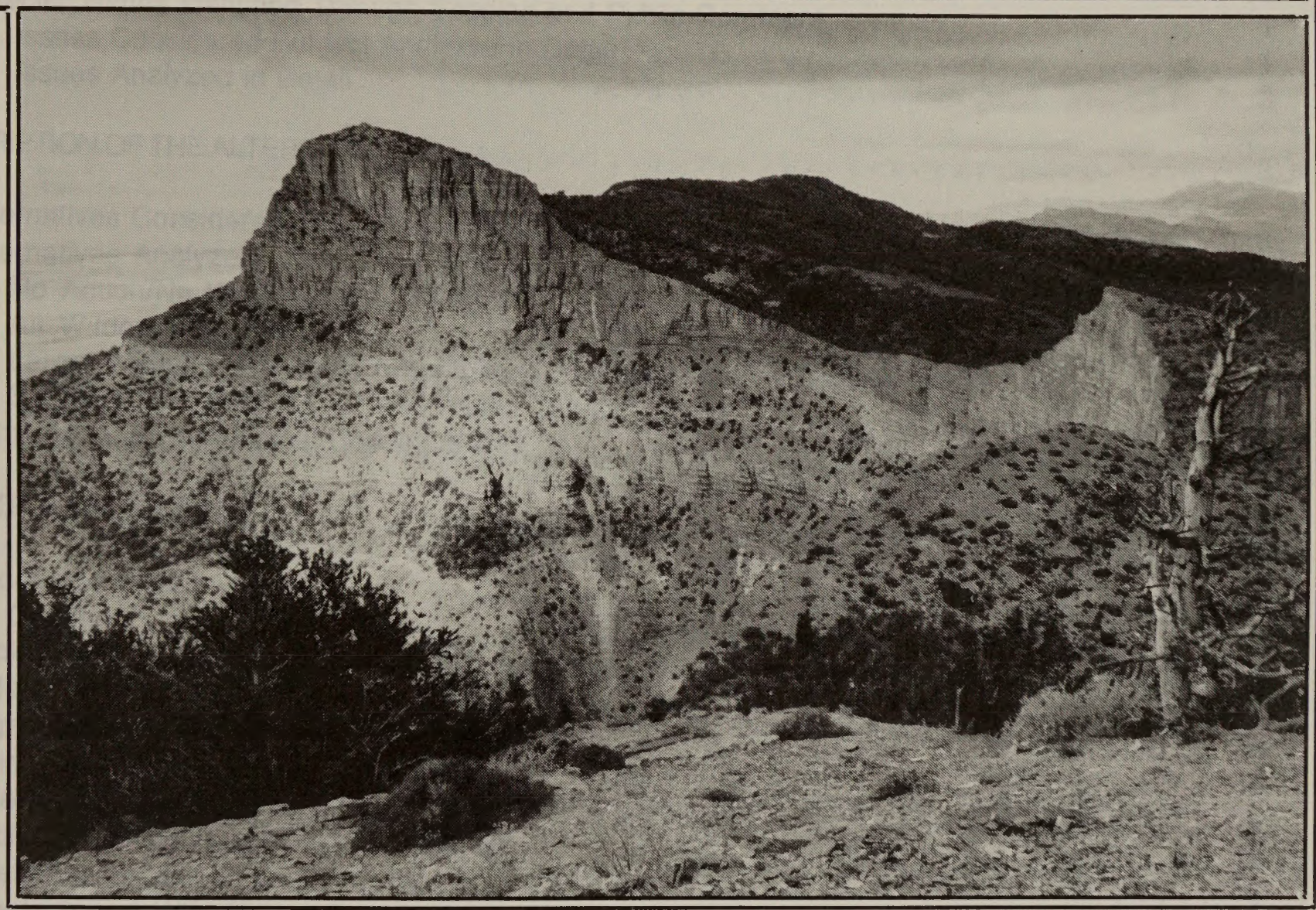
Conclusion: Restrictions on access and predator control would result in inconvenience to livestock permittees. Management costs and sheep losses to predators would increase.

- Impacts on Air Force Operations

Two USAF HAMOTS stations would be removed from the WSA. It would be necessary for the Air Force to place the facilities at alternate sites and to redesign the tracking system grid.

Conclusion: Removal of two HAMOTS sites would require alternate sites and redesigning of the Air Force tracking system grid.

Notch Peak WSA



NOTCH PEAK WSA

TABLE OF CONTENTS

INTRODUCTION 1

General Description of the Area 1
Changes for the Final EIS 1
Specific Issues Identified Through Scoping and Public Comment 1
Issues Considered But Not Analyzed in Detail 1
Issues Analyzed in Detail 3

DESCRIPTION OF THE ALTERNATIVES 3

Alternatives Considered and Eliminated from Detailed Study 3
Alternatives Analyzed 3
No Action/No Wilderness Alternative 4
All Wilderness Alternative 6
Large Partial Wilderness Alternative (Proposed Action) (28,000 Acres) 6
Small Partial Wilderness Alternative (9,000 Acres) 10
Summary of Environmental Consequences 12

AFFECTED ENVIRONMENT 12

Wilderness Values 12
Air Quality 15
Geology and Topography 15
Soils 16
Vegetation Including Special Status Species 16
Water Resources 16
Mineral and Energy Resources 16
Wildlife Including Special Status Species 18
Forest Resources 18
Livestock and Wild Horses/Burros 18
Visual Resources 19
Cultural Resources 19
Recreation 19
Land Use Plans 20
Socioeconomics 20

ENVIRONMENTAL CONSEQUENCES OF ALTERNATIVES 21

No Action/No Wilderness Alternative 21
All Wilderness Alternative 22
Large Partial Wilderness Alternative (Proposed Action) (28,000 Acres) 23
Small Partial Wilderness Alternative (9,000 Acres) 25

NOTCH PEAK WSA

(UT-050-078)

INTRODUCTION

General Description of the Area

The Notch Peak WSA contains 51,130 acres of public land in western Millard County, Utah. It is located about 45 miles west of Delta, Utah, and is roughly 15 miles long (north to south) and 9 miles wide at its widest point.

The Notch Peak WSA is between the Howell Peak and King Top WSAs. It is separated from Howell Peak on the north by the Marjum Canyon road and from King Top by Highway 50 which forms a portion of the south boundary.

Notch Peak itself is one of the most prominent West Desert landmarks and the second highest peak in the House Range (9,655 feet). Notch Peak is not only a local landmark, but its distinct shape makes it readily identifiable from over 70 miles away. Major features of the WSA include Notch Peak and stands of bristlecone pine. Principal land uses are livestock grazing and low intensity primitive recreation.

The climate of Notch Peak WSA is characterized by low precipitation and humidity and wide ranges in daily and annual temperatures. Precipitation ranges from 10 inches at the lower elevations to 16 inches on the high slopes. Temperature extremes are -32 degrees Fahrenheit (F) to 106 degrees F annually.

In general, vegetation consists of pinyon-juniper woodland and sagebrush-horsebrush. White fir, bristlecone pine, Ponderosa pine, and aspen are found at the higher elevations.

Changes for the Final EIS

In addition to the changes noted in the Introduction to Volume II, the following changes specific to the WSA have been made since publication of the Draft EIS.

1. Descriptions of the No Action/No Wilderness and Partial Wilderness Alternatives have been revised to coincide with the Warm Springs RMP, which has replaced the House Range MFP since publication of the Draft EIS. The main feature of the RMP for the Notch Peak WSA is the creation of the 9,000-acre Notch Peak National Natural Landmark/Area of Critical Environmental Concern (NNL/ACEC). The RMP proposes that this area be withdrawn from mineral entry, closed to surface occupancy for oil and gas leases, and closed to ORV use and woodland harvest.

2. The anticipated surface disturbance presented in the Draft EIS (446 acres) was based on the assumption that all mineral and other resources potentially within the WSA would be developed sometime in the future without consideration of technical or economic feasibility. In response to public comments relative to the feasibility of developments, the disturbance estimates have been revised to focus on activities projected to be feasible within the foreseeable future (see Appendix 6 in Volume I). This resulted in a reduction of surface disturbance estimates from the 446 acres reported in the Draft EIS to approximately 1 acre of surface disturbance for the Final EIS.

3. No wildlife transplants or developments were anticipated in the Draft EIS. The UDWR is now proposing an elk transplant into the WSA. The Final EIS assumes that elk would be transplanted and that two water guzzlers would be built to accommodate the transplant. One acre of surface disturbance is estimated to result from construction of these guzzlers.

Specific Issues Identified Through Scoping and Public Comment

- Issues Considered But Not Analyzed in Detail

In addition to the issues discussed and eliminated from further consideration in the Introduction to Volume II (i.e., impacts on air quality, geology and topography, soils, water rights, and land use plans and policies), the following issues or impacts specific to the Notch Peak WSA were considered but are not analyzed in detail in the Final EIS for the reasons described below.

1. Vegetation Including Special Status Species: Estimates of surface disturbance without wilderness designation have been revised downward from the 446 acres reported in the Draft EIS to no mineral-related

STATEWIDE
POCKET MAP
WSA
NO. 9
SEE VOL.I

surface disturbance in the Final EIS. Only 1 acre of surface disturbance related to construction of guzzlers is projected. Given this new scenario, the impacts of direct disturbance of vegetation would not be significant with any of the alternatives. There are no listed threatened or endangered plant species known to occur within the WSA. In any event, BLM would conduct site-specific clearances of potentially disturbed areas and consult with the FWS concerning impacts on threatened or endangered plant species. No roads would be required for the guzzlers and they would be placed in areas away from special status plant species. Therefore, impacts on vegetation are not analyzed in detail for the Notch Peak WSA.

2. Water Resources: There are no springs or perennial streams in the WSA. Therefore, impacts on water uses and quality are not analyzed in detail in the Final EIS.

3. Mineral Resources: The public has expressed concern that wilderness designation would interfere with or prevent mineral exploration, development, and production. There are three post-FLPMA oil and gas leases within the WSA. However, potential oil and gas deposits are small with a very low certainty that they exist. Even though there are 207 mining claims in the WSA, BLM believes that projected uranium and other locatable mineral deposits are small and/or could not be economically developed in the foreseeable future (see Appendix 6 in Volume I). More accessible deposits of salable minerals exist outside the WSA. For these reasons it is determined that mineral exploration or development would not occur in the foreseeable future with or without wilderness designation. Therefore, impacts on mineral and energy exploration and production are not analyzed in detail in the Final EIS.

4. Wildlife Including Special Status Species: The public is concerned that without wilderness designation mineral or other developments would destroy wildlife habitat and lead to reductions in wildlife populations. They are also concerned that use of ORVs would disturb wildlife and destroy habitat. The Notch Peak WSA provides habitat for a variety of animal species, but populations are low and no one species can be described as abundant. Two endangered and six other special status animal species may be found in the WSA. An elk transplant and construction of two guzzlers are proposed and could be carried out with any of the alternatives. Because no mineral developments are expected in the WSA in the foreseeable future, wildlife habitats would not be lost. Terrain and surface features generally restrict the use of ORVs to the 20 miles of ways in the WSA. Therefore, impacts on wildlife habitat and populations are not significant issues for the Final EIS.

5. Forest Resources: The forest resources in the WSA consist of 12,610 acres of pinyon and juniper trees and 290 acres of timberland species. The timberland species are not accessible at present and are unsuitable for harvest because of steep slopes. Demand is low for the pinyon and juniper and only 250 acres are presently accessible. Impacts on forest resources are not significant issues for analysis in the Final EIS.

6. Visual Resources: As discussed above for vegetation, only 1 acre of surface disturbance is projected for the WSA in the Final EIS. Visual resources would not be significantly affected. Therefore, impacts on visual resources are not analyzed in the Final EIS.

7. Cultural Resources: Cultural resources could be destroyed by surface-disturbing projects, use of vehicles or vandalism. However, only one cultural resource site has been recorded in the WSA. No mineral-related surface disturbance is projected. Terrain and surface features limit vehicle use to the 20 miles of ways inside the WSA. Additionally, inventories for the purpose of site recordation and mitigation of impacts would take place prior to any surface disturbance in the future. Given these conditions, impacts on cultural resources are not significant issues for the Notch Peak WSA.

8. Economic Conditions: The public, including State and local government, is concerned that wilderness designation would preclude mineral or other economic developments and adversely affect local economic conditions. Others believe that primitive recreation use would increase following wilderness designation and would contribute to the local economy. There are no existing or anticipated mineral developments or proposals for lands or realty activities which would be impaired with or without wilderness designation. Because no economic developments are expected, present revenues are small, and because recreational use is projected to increase to only 2,200 visitor days per year and would contribute only $9,020 annually to the local economy ($4.10 per visitor day), impacts on economic conditions for the Notch Peak WSA are not significant issues for the Final EIS.

NOTCH PEAK WSA

- Issues Analyzed in Detail

The significant issues for the Notch Peak WSA are:

1. Impacts on the wilderness values of naturalness, opportunities for solitude and primitive recreation, and special features.

2. Impacts on livestock management, including predator control and vehicle access for management.

3. Impacts on recreational use of the WSA including tradeoffs between primitive and vehicle-based recreation.

Comments made during the public comment period for the Draft EIS included the following:

1. The need to include Painter Spring in the WSA.

2. A suggested 40,000-acre Partial Wilderness Alternative.

3. Need for the rationale for the BLM proposed action.

4. Support for the 9,000-acre Partial Wilderness Alternative.

5. Inadequacy of the geology section of the EIS.

6. Need to note the presence of water on adjacent lands.

7. New information on sensitive plant species.

8. Affect of wilderness designation on multiple uses of Painter Spring.

9. Underrating of mineral values by BLM.

10. The need to note the presence of limestone and its value.

11. The need to note the use of ways by livestock permittees.

12. The affect of restrictions on predator control methods.

13. Underestimates of recreational use by BLM.

14. Inconsistency in ratings of opportunities for solitude and opportunities for ORV use.

15. Questions on BLM's rating of opportunities for photography.

16. Statements on the possible contribution of Notch Peak to the NWPS.

17. Need to protect a power transmission line corridor between the Notch Peak and Howell Peak WSAs.

See Volume VII-B for responses to general comments applicable to all WSAs and/or the Statewide analysis and Volume VII-C, Section 9, for responses to specific comments about the Notch Peak WSA.

DESCRIPTION OF THE ALTERNATIVES

Alternatives Considered and Eliminated from Detailed Study

A 40,000-acre Partial Wilderness Alternative that would exclude the northern portion of the WSA and the Sawtooth Cove, while adding portions of two State sections outside the WSA was suggested in the public comments. This alternative is not analyzed because the inclusion of State lands is not consistent with BLM's wilderness review guidelines (refer to the response to General Comment 6.4) and because the acreage added to BLM's proposed 28,000-acre Partial Wilderness Alternative includes lower flats with low-growing vegetation where opportunities for solitude and primitive recreation are less than outstanding. In addition, the impacts of designation of the added acreage would not be substantially different from those described for the 28,000-acre Partial Wilderness Alternative that is analyzed in detail.

Alternatives Analyzed

Four alternatives are analyzed for this WSA: (1) No Action/No Wilderness; (2) All Wilderness (51,130 acres); (3) Large Partial Wilderness (Proposed Action) (28,000 acres); and (4) Small Partial Wilderness (9,000 acres). A description of BLM's management practices with each alternative follows. Where management intentions have not been clearly identified, assumptions are made based on management projections under each alternative. These assumptions are indicated in each case. The assumed BLM management actions described in the Introduction to Volume II are also applicable.

- No Action/No Wilderness Alternative

With this alternative, none of the 51,130-acre Notch Peak WSA would be designated by Congress as part of the NWPS. Although BLM's land use plans are regularly updated, it is projected that the area would continue to be managed in accordance with the Warm Springs RMP, (USDI, BLM 1987a). If not designated as wilderness, 9,000 acres of the WSA would be nominated for designation as a NNL/ACEC, placed in Category 3 for fluid mineral leasing, recommended for withdrawal from mineral entry, closed to motor vehicles, and designated a right-of-way avoidance area. Forest lands would remain unavailable for harvest of forest products. Management objectives would be to protect the area's outstanding examples of ecologic and geologic features and other natural values for educational, recreational, and inspirational benefit.

The seven sections of State land (4,478.9 acres) within the WSA (refer to Map 1 and Appendix 3 in Volume I) have not been identified in the RMP for special Federal acquisition through exchange or purchase.

- Management Conditions and Constraints

Nine thousand acres would be closed to mineral location and sale. Development work, extraction, and patenting would be allowed on 207 existing mining claims (4,140 acres) and potential future mining claims on the 42,130 acres not withdrawn from mineral entry. Development would be regulated by unnecessary or undue degradation regulations (43 CFR 3809). At the present time 2,090 acres of the WSA are leased for oil and gas. These three post-FLPMA leases could be developed under stipulations issued at the time of leasing. Future leases could be developed under Category 1 (standard stipulations) on 42,130 acres and Category 3 (no surface occupancy) on 9,000 acres. Although mineral resources would be managed as described above, no locatable or leasable exploration or developments are projected in the WSA because the level of known resources and the probability of their development are too low to support that assumption. Appendix 6 in Volume 1 explains mineral exploration and development projections.

The present domestic livestock grazing use of the 51,130-acre area of the WSA would continue as authorized in the RMP (3,352 AUMs). Existing rangeland developments (1 mile of fence and a cattleguard) could be maintained. No additional developments are planned.

Some 8,500 acres in the WSA would continue to be managed under the West Desert HMP (USDI, BLM, 1980c) which directs management for pronghorn antelope, chukar partridge, mule deer, and raptors. The UDWR is proposing to transplant elk into the WSA. Two water guzzlers would be constructed to support the transplanted elk.

Approximately 42,130 acres of the WSA would remain open to ORV use while 9,000 acres would be closed to ORV use. ORV use would continue to be restricted to existing roads, ways, and trails by steep terrain.

Approximately 42,130 acres of the WSA would be open to woodland product harvest and 9,000 acres would be closed to harvest.

Increased harvest is not expected because only 650 acres are on slopes suitable for harvest and 9,000 acres would be closed to woodland harvest by the BLM land use plan. Visual resources would be managed under VRM Class II on 5,230 acres, Class III on 27,300 acres, and Class IV on 18,600 acres.

- Action Scenario

It is projected that implementation of the No Action/No Wilderness Alternative would result in approximately 1 acre of surface disturbance in the foreseeable future. This disturbance would result from the construction of two guzzlers to support possible elk transplants in the WSA. New roads would not be necessary to access the sites. Each guzzler would be built in about 2 days and would require only limited maintenance over time. No other rangeland, wildlife habitat, or watershed improvement projects are planned. No surface disturbance is anticipated from locatable or leasable minerals exploration or development.

No disturbance from ORV activity is projected due to terrain and management constraints.

Recreation use is projected to increase over the current estimated use of 250 annual visitor use days at a rate of 2 to 7 percent per year. As much as 25 percent of the use involves vehicular access on approximately 20 miles of existing ways.

NOTCH PEAK WSA

R. 14 W. R. 13 W. R. 12 W.

T. 18 S.

T. 19 S.

T. 20 S.

Map 1
LAND STATUS
Notch Peak WSA
UT-050-078

Legend

- WSA Boundary
- State Land Within or Adjacent to WSA
- BLM Administered Land Within or Adjacent to WSA

SCALE IN MILES 0 1 2

SCALE IN KILOMETERS 0 1 2 3

N

ELEVATION EXPRESSED IN METERS

• All Wilderness Alternative

With this alternative, all 51,130 acres of the Notch Peak WSA would be designated by an act of Congress as part of the NWPS (refer to Map 2). It would be managed in accordance with the BLM Wilderness Management Policy (BLM Manual 8560) to preserve its wilderness character.

The policy of the State is to reserve its position regarding exchange of in-held lands within any particular WSA (see Chapter 1 in Volume I). Based on this policy regarding exchange of State lands, it is assumed that State lands would remain under existing ownership. There are seven State sections (4,478.9 acres) in the WSA (refer to Map 1 and Appendix 3 in Volume I). There are no in-held private or split-estate land in the WSA. The figures and acreages given with this alternative are for Federal lands only.

• Management Conditions and Constraints

After wilderness designation, all 51,130 acres would be withdrawn from mineral location and closed to new mineral sale. Development work, extraction, and patenting would be allowed to continue on that portion of the approximately 4,140 acres in 207 existing mining claims that may be determined to be valid. Development would be regulated by unnecessary or undue degradation guidelines (43 CFR 3809) with considerations to wilderness values. Three existing post-FLPMA oil and gas leases involving about 2,090 acres would be phased out upon expiration unless a find of oil or gas in commercial quantities is shown. Although mineral resources would be managed as described above, no locatable or leasable exploration or developments are projected in the WSA because the level of known resources and the probability of their development are too low to support that assumption. Appendix 6 in Volume I explains mineral exploration and development projections.

The estimated 3,352 AUMs in the WSA would remain available to livestock as presently allotted. Use and maintenance of 1 mile of fence and one cattleguard could continue in the same manner as in the past based on practical neccessity and reasonableness. It is assumed that guzzlers would be designed and installed compatible with wilderness protection guidelines. Two guzzlers would be needed to support a UDWR proposed elk transplant.

The entire 51,130-acre area would be closed to ORV use except for (1) users with valid existing rights if approved by BLM in accordance with 43 CFR 8560 provisions; or (2) for occasional and short-term vehicular access approved by BLM for maintenance of approved livestock developments. The approximately 20 miles of existing vehicular ways in the WSA would not be available for vehicular use except as indicated above. About 22 miles of the WSA boundary follow an existing paved highway and gravel and dirt roads that would remain open to vehicular travel.

• Action Scenario

Surface disturbance would be limited to the 1 acre associated to with construction of the two guzzlers described in the No Action/No Wilderness Alternative. No other rangeland, wildlife habitat, or watershed improvement projects are planned following wilderness designation. No mineral exploration or development on existing claims or leases is projected. Implementation of the All Wilderness Alternative would preclude new mining claim location and mineral leasing in the WSA. Therefore, locatable or leasable mineral resource exploration or development would not occur.

No disturbance from ORV activity is projected due to management and terrain constraints.

Primitive-type recreation use is projected to increase over the current estimated 183 annual visitor days of primitive use at a rate of 2 to 7 percent annually. No vehicular use would occur.

• Large Partial Wilderness Alternative (Proposed Action) (28,000 Acres)

For this alternative, 28,000 acres of the Notch Peak WSA would be designated as wilderness (refer to Map 3). The objective of this alternative is to analyze as wilderness those portions of this WSA that have the best wilderness values. BLM believes that wilderness values are of a higher quality in areas where outstanding opportunities for solitude and/or primitive recreation exist, preferably in combination with special features. In forming this alternative, the portions of the WSA with outstanding opportunities for solitude and primitive recreation and special features were included where possible within a manageable boundary. The 28,000 acres analyzed as wilderness under this alternative include Notch Peak itself and adjoining steep mountainous terrain extending north and

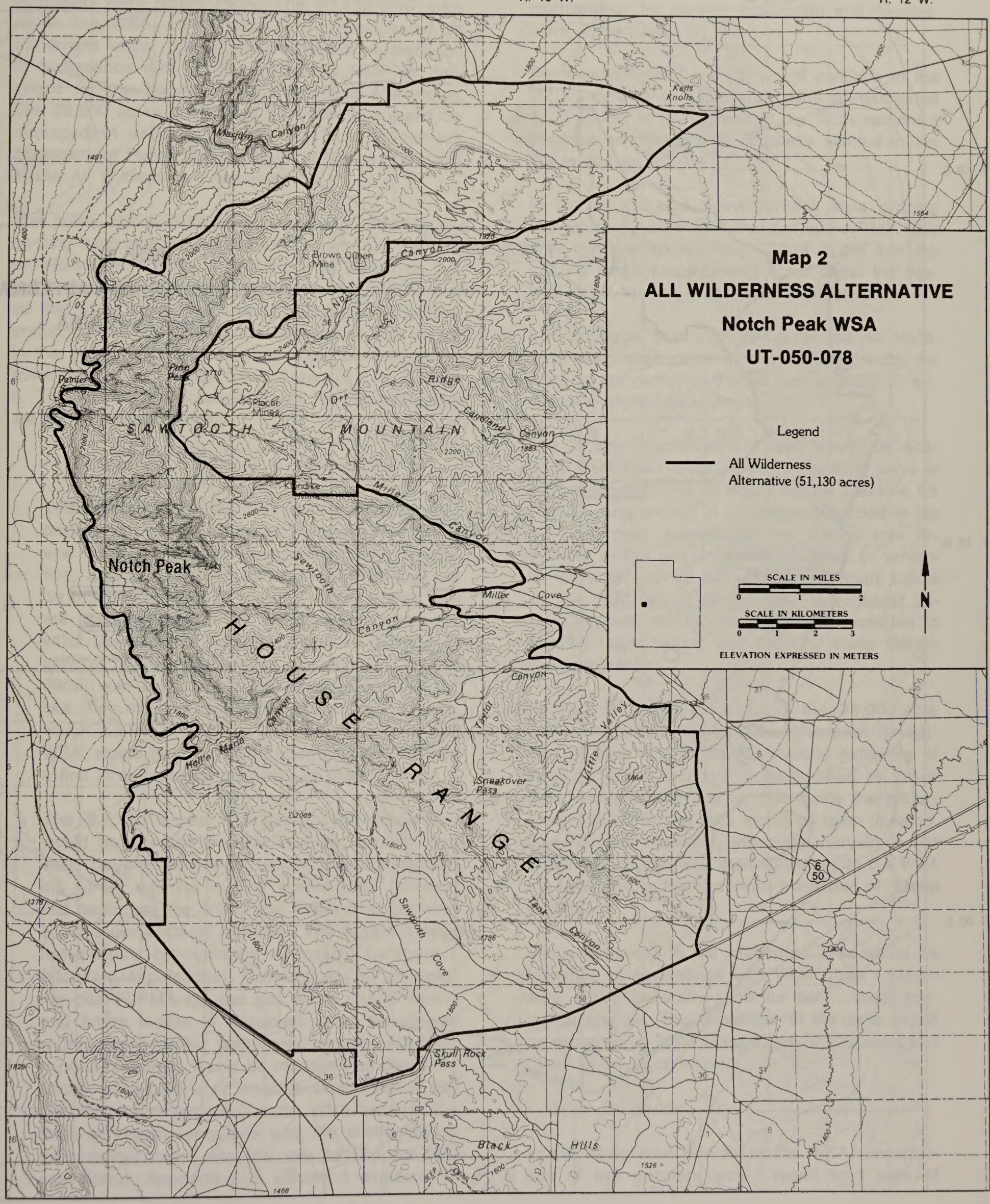
NOTCH PEAK WSA

R. 14 W. R. 13 W. R. 12 W.

T. 18 S.

T. 19 S.

T. 20 S.



Map 2
ALL WILDERNESS ALTERNATIVE
Notch Peak WSA
UT-050-078

Legend

All Wilderness Alternative (51,130 acres)

SCALE IN MILES
0 1 2

SCALE IN KILOMETERS
0 1 2 3

N

ELEVATION EXPRESSED IN METERS

NOTCH PEAK WSA

R. 14 W. R. 13 W. R. 12 W.

T. 18 S.

T. 19 S.

T. 20 S.

Map 3
PARTIAL WILDERNESS ALTERNATIVE
Notch Peak WSA
UT-050-078

Legend

WSA Boundary

Partial Wilderness Alternative (28,000 acres)

SCALE IN MILES
0 1 2

SCALE IN KILOMETERS
0 1 2 3

N

ELEVATION EXPRESSED IN METERS

southeast from Notch Peak. The 23,130-acre area within the WSA, but outside of that designated as wilderness under this alternative, would be managed in accordance with the Warm Springs RMP as described for the No Action/No Wilderness Alternative. The 28,000 acres designated as wilderness would be managed in accordance with the BLM Wilderness Management Policy (BLM Manual 8560) as described in the All Wilderness Alternative.

The policy of the State is to reserve its position regarding exchange of in-held lands within any particular WSA (see Chapter 1 in Volume I). Based on this policy regarding exchange of State lands, it is assumed that State lands would remain under existing ownership. There are three State sections (1,922 acres) in the portion of the WSA that would be designated wilderness (refer to Map 1 and Appendix 3 in Volume I). The figures and acreages given for this alternative are for Federal lands only.

- Management Conditions and Constraints

The 28,000-acre wilderness area would be withdrawn from mineral entry and closed to new mineral leasing and sale. Development work, extraction, and patenting would be allowed to continue on 3,580 acres in 179 existing mining claims that are in this portion of the WSA, provided they are valid. Development would be regulated by unnecessary or undue degradation guidelines (43 CFR 3809) with consideration given to wilderness values. Two existing post-FLPMA oil and gas leases, which cover 450 acres in this portion of the WSA, would be phased out upon expiration unless a find in commercial quantities is shown.

The 23,130 acres not designated wilderness would be open to mineral location, leasing, and sale. Development work, extraction, and patenting of 28 existing mining claims (560 acres in this portion of the WSA) and future mining claims could occur if claims are valid. The area not designated would be managed as leasing Category 1 (standard stipulations). Development of an existing post-FLPMA oil and gas lease (1,640 acres) and future leases in this area could be allowed without concern for wilderness values. Although mineral resources would be managed as described above, no locatable or leasable exploration or developments are projected in the WSA because the level of known resources and the probability of their development are too low to support that assumption. Appendix 6 in Volume 1 explains the methodology for mineral exploration and development projections.

Domestic livestock grazing would continue in the 28,000-acre wilderness area with an estimated 1,038 AUMs in this portion of the WSA remaining available to livestock as presently allotted in the Warm Springs RMP.

In the 23,130-acre nonwilderness area grazing use would continue as authorized in the RMP. This area contains an estimated 2,314 AUMs and the existing range developments noted under the description of the All Wilderness Alternative.

It is projected that a UDWR proposed elk transplant and construction of two guzzlers would be done in the designated area compatible with wilderness protection criteria.

The 28,000-acre wilderness area would be closed to ORV use. About 7 miles of existing ways in this portion of the WSA would not be available for vehicular use except in situations described in the All Wilderness Alternative. The 23,130-acre remainder of the unit, including 13 miles of vehicular ways as well as the existing dirt roads bordering the WSA, would remain open to vehicular travel. ORV use would continue to be restricted to existing roads, ways, and trails by steep terrain and topography.

Harvest of forest products in the 28,000-acre wilderness would not be allowed except for harvest of pine nuts or noncommercial gathering of dead-and-down wood, if accomplished by other than mechanical means for use inside the wilderness. The remaining area would be open to woodland harvest. However, increased harvest is not expected because less than 650 acres of the WSA are unsuitable for harvest because of steep slopes.

Visual resources in the wilderness area would be managed in accordance with VRM Class I standards, which generally allow for only natural ecological change. The remainder of the area would be managed as VRM Class III on 12,130 acres and Class IV on 11,000 acres.

- Action Scenario

In the designated portion of the WSA, construction of two guzzlers would result in 1 acre of

surface disturbance as described in the No Action/No Wilderness Alternative. No other rangeland, wildlife habitat, or watershed improvement projects are planned following wilderness designation. No mineral exploration or development on existing claims or leases is projected. In the designated area, new mining claim location and mineral leasing would not be allowed. No surface disturbance is projected for the nondesignated portion of the WSA.

No surface disturbance is projected from ORV activity due to management and terrain constraints.

Recreation use is projected to increase over the current estimated use of about 250 visitor days at a rate of 2 to 7 percent per year. Probably less than 25 percent of the use would involve vehicular access on about 13 miles of existing ways in the nondesignated area.

• Small Partial Wilderness Alternative (9,000 Acres)

With this alternative, 9,000 acres of the Notch Peak WSA would be designated as wilderness (refer to Map 4). The objective of this alternative is to identify and analyze designation of only the portion of the WSA that is recommended as a NNL/ACEC in the Warm Springs RMP. The 9,000 acres analyzed as wilderness under this alternative include only the Notch Peak area itself. It differs from the Large Partial Wilderness Alternative in that it does not include the mountainous terrain extending north and southeast of Notch Peak. The 42,130-acre area within the WSA but outside of that designated as wilderness, would be managed in accordance with the Warm Springs RMP as described for the No Action/No Wilderness Alternative. The area designated as wilderness would be managed in accordance with the BLM Wilderness Management Policy (BLM Manual 8560) as described in the All Wilderness Alternative.

Based on the State policy regarding exchange of State lands, it is projected that State lands would remain under existing ownership (see Chapter 1 in Volume I). There is one State section (640 acres) in the portion of the WSA that would be designated wilderness (refer to Map 1 and Appendix 3 in Volume I). The figures and acreages given for this alternative are for Federal lands only.

• Management Conditions and Constraints

The 9,000-acre wilderness area would be withdrawn from mineral entry and closed to new mineral leasing and sale. Development work, extraction, and patenting would be allowed to continue on the 580 acres in 29 existing mining claims in this portion of the WSA, provided that they are valid. Development would be regulated by unnecessary or undue degradation regulations (43 CFR 3809) with consideration of wilderness values. There are no oil and gas leases in this portion of the WSA. The 42,130-acre area not designated wilderness would be open to mineral location, leasing, and sale. Development work, extraction, and patenting of 178 existing (3,560 acres) and future mining claims could occur in the area if claims are valid. The area not designated would be managed as leasing Category 1 on 41,709 acres and Category 3 on 421 acres. Development of three existing post-FLPMA oil and gas leases (2,090 acres) and future leases in this portion of the WSA could be developed without concern for wilderness values. Although mineral resources would be managed as described above, no locatable or leasable exploration or developments are projected in the WSA because the level of known resources and the probability of their development are too low to support that assumption. Appendix 6 in Volume 1 explains mineral exploration and development projections.

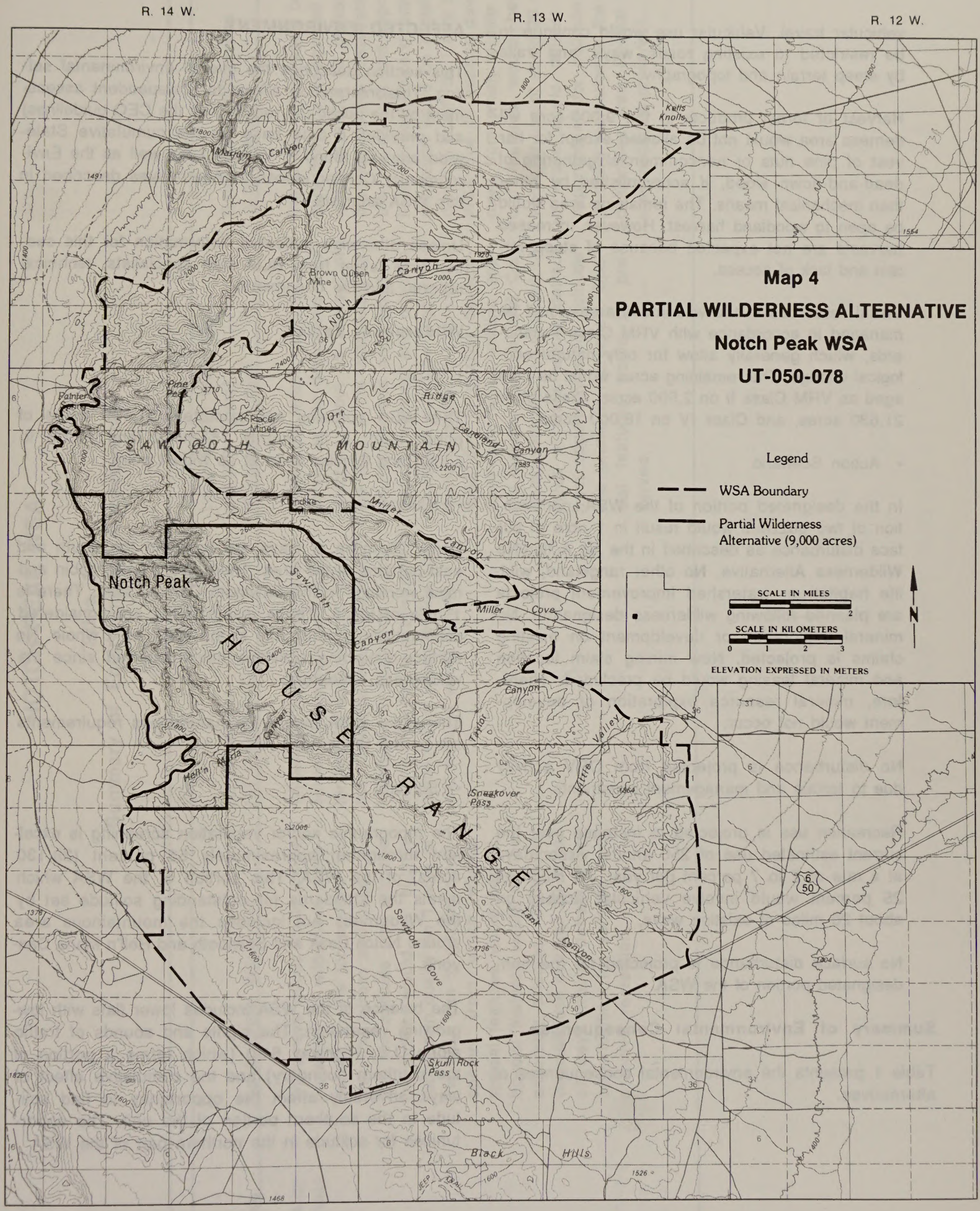
Domestic livestock grazing would continue in the 9,000-acre wilderness area. The estimated 310 AUMs estimated to be in this area would remain available to livestock as presently allotted.

In the 42,130-acre nonwilderness area grazing use would continue as authorized in the RMP (3,042 AUMs). The existing 1 mile of fence and cattleguard are in this area and could be maintained without wilderness concerns. Additional rangeland developments are not proposed.

The two guzzlers required to support a UDWR elk transplant would be designed and constructed in the designated area compatible with wilderness protection guidelines for this area.

The 9,000-acre wilderness area would be closed to ORV use. None of the 20 miles of existing ways are in this portion of the WSA. Cherry-stemmed roads would also not be involved. The 42,130-acre remainder of the unit would remain open to

NOTCH PEAK WSA



vehicular travel. Vehicular use would continue to be restricted to existing roads, ways, and trails by steep terrain and topography.

Harvest of forest products in the 9,000-acre wilderness area would not be allowed except for harvest of pine nuts or noncommercial gathering of dead-and-down wood, if accomplished by other than mechanical means. The remaining area would be open to woodland harvest. However, increased harvests are not expected because of steep terrain and lack of access.

Visual resources in the wilderness area would be managed in accordance with VRM Class I standards, which generally allow for only natural ecological change. The remaining acres would be managed as VRM Class II on 2,500 acres, Class III on 21,630 acres, and Class IV on 18,000 acres.

- Action Scenario

In the designated portion of the WSA, construction of two guzzlers would result in 1 acre of surface disturbance as described in the No Action/No Wilderness Alternative. No other rangeland, wildlife habitat, or watershed improvement projects are planned following wilderness designation. No mineral exploration or development on existing claims is projected. New mining claim location and mineral leasing would be precluded. Therefore, mineral resource exploration or development would not occur.

No disturbance is projected from ORV activity due to terrain and management constraints.

Recreation use is projected to increase over the current estimated use of 250 annual visitor days at a rate of 2 to 7 percent per year. As much as 25 percent would involve vehicular access on about 20 miles of existing ways.

No surface disturbance is projected for the nondesignated portion of the WSA.

Summary of Environmental Consequences

Table 1 presents the environmental consequences of alternatives.

AFFECTED ENVIRONMENT

This section describes the overall environmental setting. This information allows for independent assessment by the public (as required by the CEQ guidelines) and provides a data base for the cumulative Statewide analysis found in Volume I, as well as the Environmental Consequences of Alternatives described in this WSA analysis.

Unless otherwise indicated, information for this section was taken from BLM staff specialists, technical reports, and file documents.

Wilderness Values

- Size

This WSA contains approximately 51,130 acres of public land. It is roughly 15 miles long (north to south) and 9 miles wide at its widest point.

- Naturalness

Some 20 miles of ways are found in the south and east portions of the area. There are a small cabin and mine workings in the Sawtooth Canyon area. There is 1 mile of fence. These disturbances are considered substantially unnoticeable in the WSA as a whole. No surface-disturbing activities have occurred since the wilderness inventory.

The entire WSA meets the naturalness requirements set by the Wilderness Act.

- Solitude

The topographic and/or vegetation screening is excellent throughout approximately 55 percent (28,130 acres) of the WSA. This portion of the WSA which meets the standards for outstanding solitude set by the Wilderness Act includes the mountainous area around Notch Peak and Sawtooth and Hell'n Maria Canyons.

The balance of the WSA includes lower flats with low-growing vegetation. The sights and sounds of traffic along U.S. Highway 6/50 (which forms a portion of the southern boundary) and the cumulative effect of ways adversely affect the opportunity to find solitude in the southern portion of the unit. The opportunities for solitude in the northern part of the WSA

NOTCH PEAK WSA

Table 1
Summary of Environmental Consequences

	Alternatives			
Resource	No Action/No Wilderness	All Wilderness (51,1130 Acres)	Large Partial Wilderness (28,000 Acres) (Proposed Action)	Small Partial Wilderness (9,000 Acres)
Impacts on Wilderness Values	Wilderness values would not be protected by wilderness designation. In the foreseeable future, naturalness and opportunities for solitude and primitive recreation would be slightly reduced in quality on 1 acre of the WSA due to guzzler development from which wildlife special features would benefit. Special features would not be adversely affected. Continued vehicular use of about 20 miles of ways would detract from opportunities for solitude and primitive recreation.	Wilderness values would be preserved. Naturalness and opportunities for solitude and primitive recreation would be slightly reduced in quality on 1 acre of the WSA due to guzzler development from which wildlife special features would benefit.	Wilderness values would be preserved in the designated area which is about 55 percent of the WSA. In the foreseeable future, naturalness and opportunities for solitude and primitive recreation would be slightly reduced in quality on 1 acre of the WSA due to guzzler development from which wildlife special features would benefit. Continued vehicular use of about 13 miles of ways would detract from opportunities for solitude and primitive recreation. Special features would be preserved.	Wilderness values would be preserved in the designated area which is about 18 percent of the WSA. In the foreseeable future, naturalness and opportunities for solitude and primitive recreation would be slightly reduced in quality on 1 acre of the WSA due to guzzler development from which wildlife special features would benefit. Vehicular use of about 20 miles of ways would detract from opportunities for solitude and primitive recreation in the non-designated area. Special features would be preserved.

Table 1 (Continued)
Summary of Environmental Consequences

Resource	Alternatives			
	No Action/No Wilderness	All Wilderness (51,1130 Acres)	Large Partial Wilderness (28,000 Acres) (Proposed Action)	Small Partial Wilderness (9,000 Acres)
Impacts on Livestock Management	Livestock grazing would not be adversely affected because management and access would continue as at present.	Vehicular restrictions could inconvenience livestock operators in the area. Management costs and sheep losses due to predators could increase.	Effects would be the same as for the All Wilderness Alternative.	Livestock grazing would not be affected because 91 percent of the forage, the existing developments, and all 20 miles of ways would be in the nondesignated area.
Impacts on Recreation	Primitive recreational opportunities would not be protected. Opportunities for vehicular recreation on 20 miles of ways would continue. Overall, recreational use would increase. The quality of the primitive recreation experience would decrease for some users as vehicle use increases.	Opportunities for primitive recreation would be preserved throughout the WSA. Vehicular recreational opportunities would be lost on 20 miles of ways. Primitive recreational use would increase, but overall recreational use would decrease initially.	Opportunities for primitive recreation would be preserved in the designated area. Opportunities for vehicular hunting and sightseeing would be lost on 7 miles of ways. Overall, recreational use would increase. The quality of the primitive recreation experience would decrease for some users as vehicle use increases.	Opportunities for primitive recreational use would be preserved in the designated area. Opportunities for vehicular use of 20 miles of ways in the nondesignated area would not be affected. Recreational use overall would increase. The quality of the primitive recreation experience would decrease as vehicle use increases.

are adversely affected by outside sights and sounds associated with mining operations and road systems. These areas (totaling approximately 23,000 acres) do not meet the standards for outstanding opportunities for solitude.

The Notch Peak WSA is within the South Range of the USAF's Utah Test and Training Range. The South Range runs approximately north to south from the southern boundary of the Bonneville Salt Flats to the San Francisco Mountains and east to west from the Sheeprock Mountains to 17 miles within Nevada. This is one of the Nation's busiest military air spaces. There are 15,000 aircraft including all types of tactical fighters and bombers in the area. There are 100 to 150 (conservative estimate) aircraft flights per day over the South Range 6 days per week. Flights occur as low as 100 feet above the ground surface. Speeds are subsonic except in the very northern portion of the test range in the area around Ibapah, where supersonic speeds are also reached. Heaviest use areas are in the northern part of the test range which includes the Notch Peak WSA (Davies, 1985). Aircraft occasionally fly directly over the WSA, and these overflights can be a source of annoyance to visitors seeking solitude. Most of these overflights are not directly over the WSA and are subsonic in this area. Military flights are occasional off-site intrusions (sight and sound) that detract from, but generally do not eliminate, the overall opportunities for solitude.

- Primitive and Unconfined Recreation

Dayhiking opportunities in the higher areas of the WSA are outstanding due to challenging terrain and spectacular views. Several routes lead to Notch Peak; the most popular is via Sawtooth Canyon. Portions of the WSA offer little topographic or vegetation variety and, consequently, fail to offer outstanding recreational experiences. Approximately 45 percent (23,000 acres) of the WSA does not meet the outstanding criteria for primitive recreation; this is the foothill area in the southern and northern portions of the WSA. The remainder of the WSA (28,130 acres) meets the Wilderness Act standards.

- Special Features

The special features identified during the BLM wilderness inventory are stands of bristlecone pine and Notch Peak. Some bristlecone pine occurs along ridgetops at higher elevations. Notch Peak is a local landmark and the second highest peak in the House Range; its distinct shape makes it readily identifiable from over 70 miles away.

The WSA has resource values that, although not identified as such during the wilderness inventory, could be considered special features. There are two animal species (bald eagle and peregrine falcon) listed as endangered. There are six other special status animal species and three special status plant species that likely occur in the WSA. Refer to the Vegetation and Wildlife Including Special Status Species sections, for additional information. Approximately 6 percent of the WSA is rated Class A for scenic quality.

- Diversity

This WSA is in the Intermountain Sagebrush Province Ecoregion and has the PNV types of juniper-pinyon woodland and saltbush-greasewood. Refer to the Vegetation Including Special Status Species section for more discussion on ecoregions and PNV types. The ecoregion and PNV types represented by this WSA are compared with existing and other potential National Wilderness Preservation Units in the Wilderness Values section of Volume I.

This WSA is within a 5-hour drive from three standard metropolitan statistical areas. These are Salt Lake City-Ogden, Utah; Provo-Orem, Utah; and Las Vegas, Nevada.

Air Quality

Air quality within the WSA has been designated as a PSD Class II area. The nearest PSD Class I area is Capitol Reef National Park, approximately 120 air miles to the southwest. The WSA is currently affected little by pollution, and visibility is unimpaired. The WSA is located near the center of the area with the highest visual range (70+ miles) in the United States (EPA, 1979).

Geology and Topography

This WSA is within the Basin and Range Physiographic Province and encompasses part of the House Range. This area is characterized by a series of generally north-south trending blockfaulted mountain ranges and sedimentary basins. Exposed bedrock in the WSA consists of Cambrian and Ordovician sedimentary rocks, and a Jurassic quartz monzonite intrusive body.

NOTCH PEAK WSA

The WSA is characteristic of basin and range relief, with this mountain range rising steeply above the surrounding valleys. The range itself typically trends north and south. The blockfault of this range is tilted, so that the west face is extremely steep; the cliff face is nearly 3,000 feet high. At 9,655 feet, Notch Peak is the second highest peak in the House Range; however, the average elevation of the WSA is approximately 7,000 feet. Notch Peak is a distinctive example of the blockfaulted mountains characteristic of the Great Basin. Several deep, narrow canyons are in the WSA; the most prominent are Hell'n Maria Canyon and Sawtooth Canyon.

Soils

Soils at the higher elevations are moderately deep, dark acid loams. Soils at the lower elevations can be very deep, light-colored, alkaline loams and sands. The entire WSA (51,130 acres) is in a slight erosion condition class. Erosion condition class is based on soil surface factors (refer to the Glossary).

It has been estimated that the annual sediment yield from soils in a slight erosion condition class is approximately 0.6 cubic yards per acre. Therefore, the annual sediment yield for the entire WSA would be approximately 30,678 cubic yards.

Reclamation potential varies from site to site and within each soil type. Generally, the deeper darker soils dominated by aspen-conifer or sagebrush types have a greater potential for reclamation than do the shallower, gravelly loam and gravelly soils associated with the pinyon-juniper or shadscale vegetation types.

Vegetation Including Special Status Species

Existing vegetation types in the WSA are shown in Table 2. Included in the 290-acre aspen-conifer vegetation type is a small stand of bristlecone pine located in the Notch Peak area of the WSA. There is no riparian vegetation in the WSA.

No listed or proposed threatened or endangered species are known to occur in the WSA. One Category 1 and one Category 2 candidate species, Eriogonum ammophilum and Cryptantha compacta, could occur in the WSA. Refer to Appendix 4 in Volume I for details.

Table 2
Existing Vegetation Types

Existing Vegetation Type		Acres	Percent of WSA
Coniferous Forest/Aspen		290	1
Pinyon-juniper woodland		12,610	24
Mountain mahogany cliffrose-squawbrush		3,973	8
Sagebrush-horsebrush		23,008	45
Shadscale-horsebrush-cheatgrass		10,226	20
Ricegrass		1,023	2
	Total	51,130	100

Source: USDI, BLM, 1987b

The Notch Peak WSA is in the Intermountain Sagebrush Province Ecoregion as shown on the Bailey-Kuchler ecosystems map (USDI, USGS, 1978). The PNV types of the WSA are listed on Table 3.

Table 3
Potential Natural Vegetation Types

PNV Type		Acres	Percent of WSA
Juniper-pinyon woodland		20,452	40
Saltbush-greasewood		30,678	60
	Total	51,130	100

Source: USDI, USGS, 1978.

Water Resources

There are no springs or live water within the WSA. There are a number of seeps in Miller Canyon and Amasa Valley, both immediately adjacent to the WSA on the east. Painter Spring, with flows of approximately 30 gallons per minute, is adjacent on the west. It fails to meet the suggested chemical criteria for human consumption because of high sodium content.

The seeps and intermittent drainages are open to further appropriation with investigation for speculative nature or interference with downstream uses.

The seeps are managed as beneficial use class 4, suitable for livestock watering.

Mineral and Energy Resources

Table 4 provides a summary of the mineral and energy ratings. Refer to Appendix 5 in Volume I for a description of the SAI rating system.

Table 4
Mineral and Energy Resource Rating Summary

Resource	Rating: Favorability[a]	Rating: Certainty[b]	Estimated Resource
Oil and Gas	f 2	c1	Less than 10 million barrels of oil; less than 60 billion cubic feet of gas
Uranium	f 1	c1	Little or none
Geothermal	f 2	c4	Low temperature resource
Beryllium	f 2	c1	Less than 10 metric tons
Lead/Zinc	f 2	c2	Less than 50,000 metric tons
Tungsten	f 2	c4	Less than 500 metric tons

Source: SAI, 1982; USDI, BLM, 1987d.

[a]Favorability of the WSA's geologic environment for a resource (f1 = lowest favorability or smallest size deposit; f4 = highest favorability or largest size deposit).

[b]The degree of certainty that the resource does or does not exist within the WSA (c1 = lowest and c4 = highest).

The WSA could contain deposits of beryllium, lead, zinc, tungsten, silver, molybdenum, platinum, and copper that are currently listed as strategic and critical materials (USDoD, 1988). Although listed as strategic, copper is relatively common. Supplies currently exceed domestic demand.

- Leasable Minerals

There are no known occurrences of leasable minerals in the WSA nor are there any active drilling or exploration activities.

- Oil and Gas

Oil and gas seismic surveys and drilling operations have taken place near the WSA. The geologic history of the WSA indicates that large structural traps for oil and gas are unlikely to occur; however, random small traps may exist. The overall favorability for the occurrence of small oil and gas deposits in the WSA exists (f2) with a very low degree of certainty (c1) (Molenaar, 1983). If any occurs in the area, it would most likely be along the eastern edge of the WSA. It is estimated that the WSA could contain less than 10 million barrels of oil and less than 60 billion cubic feet of gas. There are approximately 2,090 acres in three post-FLPMA leases in the WSA. Approximate acreages of present leasing categories in the WSA are as follows: Category 1 (standard stipulations) 42,130 acres, and Category 3 (no surface occupancy) 9,000 acres.

- Geothermal

Thermal springs discharge northwest of the WSA at Coyote, Tule, and South Tule Springs. The WSA is considered marginally favorable (f2) for low temperature geothermal resources with a high degree of certainty (c4). Geothermal resources would probably be uneconomic to extract and there is currently no demand. There are currently no geothermal leases in the WSA.

- Locatable Minerals

There are presently 207 mining claims covering 4,140 acres scattered throughout the WSA. Generally, the geologic history of the area indicates a favorable environment for small mineral deposits. Much of the known mineralization and mining activity in the area has been excluded from the WSA. However, large areas inside the boundaries are still either composed of or influenced by the igneous intrusives. More thorough exploration would be required to fully determine the potential for commercial development of the area. Numerous exploration activities have occurred, both inside and near the WSA.

- Beryllium

SAI (1982) assigned a favorable ranking for small deposits (f2) due to the region being broadly favorable for beryllium and due to the intrusive body within the WSA. There is a very low (c1) degree of certainty that the deposit exists.

- Lead and Zinc

Small lead and zinc deposits are known to occur within the WSA (Bullock, 1981). Carbonate host rocks such as the Notch Peak and House limestones, the Chisholm shale, plus the intrusive Notch Peak quartz monzonite indicates a favorable mineral environment for small deposits (f2). A low degree of certainty (c2) has been assigned. Increased mineralization could be expected at depth based on similar geologic occurrences and models (Fisher and Juilland, 1986; Beatty, 1986; and Mutschler, 1981). Silver, gold, copper, platinum, rubidium, and molybdenum are also associated with these deposits. Some gold placer mining has occurred within the WSA in Sawmill Canyon (White Lady Claims) and adjacent to the WSA at Amasa Valley.

- Tungsten

The geologic conditions described above are also favorable for small deposits of tungsten, primarily occurring as the mineral scheelite. Tungsten has been mined from the Brown Queen Mine in the north end of the WSA, and there are additional mines adjacent to the WSA boundary. Therefore, a favorability for small deposits (f2) (less than 500 tons containing metal) exists with a high (c4) degree of certainty.

- Uranium

Vein deposits of uranium could occur at depth within the intrusive rocks in the WSA, however, no deposits are known. Therefore, the geologic favorability within the WSA is very low (f1) with a very low (c1) degree of certainty.

- Salable Minerals

There are no established salable material sites within the WSA. Sand and gravel occur in the WSA, as well as large quantities of limestone and volcanics. However, no demand for any salable materials in the WSA is expected due to the availability of other deposits in better locations.

Wildlife Including Special Status Species

The Notch Peak WSA provides habitat for a variety of species. There are 50 species of mammals, 103 species of birds, 14 species of reptiles, and one amphibian species that inhabit the area at different times of the year. Although a great diversity exists, no one species can be considered as abundant. Approximately 8,500 acres in the WSA are managed under the West Desert HMP (USDI, BLM, 1980c) which directs wildlife management for pronghorn antelope, chukar partridge, mule deer, predators, and raptors. There are no existing wildlife habitat improvement projects within the WSA. The UDWR is proposing to transplant elk into the WSA area and two water guzzlers would be needed to support transplanted elk.

The entire WSA (51,130 acres) provides yearlong habitat for mule deer. This habitat is lightly used because of the low population of deer (approximately 10 deer). The WSA provides approximately 3,195 acres of chukar habitat. There are two endangered (bald eagle and peregrine falcon) and one BLM sensitive (golden eagle) species that inhabit the WSA. Five Category 2 candidate bird species, the ferruginous hawk, long-billed curlew, Swainson's hawk, western snowy plover, and white-faced ibis, may occur in the WSA. These birds frequent areas throughout the Great Basin and other parts of the western United States. Refer to Appendix 4 in Volume I for details. Although there is no Federally designated critical habitat in the WSA, the entire area is considered crucial yearlong habitat for golden eagle. This indicates that golden eagles may nest somewhere in the area.

Forest Resources

There are approximately 12,610 acres of pinyon-juniper woodland and 290 acres of coniferous forest. Less than 650 acres of the 12,900-acre total are suitable for harvest because of slopes in excess of 40 percent. None of the timber area is presently accessible. The 290 acres of timber species are on steep slopes and are inaccessible without additional road construction. Present harvest of forest products is estimated to average 10 to 15 cords of firewood per year.

Livestock and Wild Horses/Burros

There are portions of nine allotments within the WSA that are used by 14 permittees. Available livestock forage within the WSA is estimated at 50 AUMs for cattle and 3,302 AUMs for sheep. Refer to Table 5 for livestock grazing use data. There are approximately 20 miles of existing ways used extensively by stockmen to obtain access for sheep camps and for hauling water. Sheep camps are regularly established at six locations in the WSA. Two of the camps are near the boundaries of the WSA, four are along existing ways. Ways are also used by BLM range staff in the management of the allotments involved. Range improvements consist of a fence (1 mile) and a cattleguard. No future range improvements are proposed. No wild horses or burros use this WSA.

APHIS conducts predator control in BLM grazing allotments that comprise the WSA. Although the records for this area are incomplete, at least 32 coyotes and one kit fox were taken in the allotments in and surrounding the WSA during the 1986 to 1987 period (USDA, APHIS, 1988). Of the coyotes, 21 were taken by aircraft, three by steel traps, two were shot, and six by cyanide gun (M-44). It is not known what portion of the predators were actually taken inside the WSA. The confirmed livestock losses for 1986-1987 in the allotments that overlap the WSA were 33 sheep and eight lambs. An unrecorded number of additional losses were reported by livestock operators.

NOTCH PEAK WSA

Table 5
Livestock Grazing Use Data

Allotments	Total Acres	Acres in WSA	Total AUMs	Number of AUMs in WSA	Number and Kind of Livestock	Season of Use	Number of Operators
King	47,000	8,555	2,927	196	4,439 Sheep	11/01-04/30	1
Blackham	31,820	2,765	2,163	289	1,802 Sheep	11/01-04/30	1
Painter Spring	33,486	1,350	2,883	32	2,575 Sheep	11/16-04/15	1
Granite	48,801	1,350	2,770	52	2,770 Sheep	11/16-04/15	2
Death Canyon	27,279	3,368	2,426	280	2,021 Sheep	11/01-04/30	1
Amasa	4,782	1,335	144	50	32 Cattle	05/16-09/30	2
North Canyon	22,279	3,560	1,242	358	1,675 Sheep	12/01-03/31	2
Klondike	30,304	3,925	3,357	135	3,341 Sheep	11/01-04/15	1
Notch Peak	34,598	23,702	3,559	1,960	3,570 Sheep	11/20-04/20	3
Total	280,349	49,910	21,471	3,352			14

Sources: USDI, BLM, 1987b.

Visual Resources

The dominant visual feature is the sheer west face of Notch Peak. The ridge line is covered with dark-green stands of conifers and lightly colored aspen groves. Table 6 summarizes the scenic quality and visual resource management classes for the WSA. The area around Notch Peak is rated as Class A (high quality) scenery and comprises approximately 6 percent (3,100 acres) of the WSA. Approximately 74 percent (37,800 acres) is rated as Class B scenery and the balance (10,230 acres) in the foothill areas is Class C. Refer to Appendix 7 in Volume I for a description of the BLM VRM rating system.

Table 6
Visual Resource Quality and Management Class

Element		Acres	Percent of WSA
Scenic Quality Class A		3,100	6
Scenic Quality Class B		37,800	74
Scenic Quality Class C		10,230	20
	Total	51,130	100
Management Class I		0	0
Management Class II		5,230	10
Management Class III		27,300	53
Management Class IV		18,600	37
	Total	51,130	100

Source: USDI, BLM, 1987b.

Cultural Resources

According to BLM site records (USDI, BLM, 1988), there is only one site (a Fremont rockshelter) recorded inside the WSA. Potential for finding cave sites and open campsites reflecting aboriginal use of the area is high. Historically, the area outside the WSA has been extensively mined. Sheepmen and cattlemen used the area to graze their animals during the summers and winters (cattle use in summer and sheep use in winter). In addition, because of its distinctive slope, Notch Peak was a major landmark along the trails going to Nevada. The potential for historic sites reflecting use by miners, sheepmen, and cattlemen is high. There are no designated National Register sites or nominees in the WSA. The potential for such sites is high.

Recreation

The quality of 15 recreational opportunities was evaluated for this WSA. Fourteen opportunities were present in varying degrees. Two activities, dayhiking and geologic sightseeing, were rated excellent in quality. Notch Peak, bristlecone pine, and several steep rugged canyons contributed to this evaluation. Scenic vistas and rock climbing were considered above average in quality. Five other opportunities (backpacking, camping, horseback riding, nature study, and photography) were considered average in quality. BLM estimates that there are approximately 250 visitor days of use in the WSA for various forms of dispersed recreation, including dayhikes to Notch Peak and hunting for mule deer and chukars. All hikers probably have Notch Peak as their destination. There are three routes that are generally used: Amasa Valley, Hell'n Maria Canyon, and Sawtooth Canyon. The 20 miles of existing vehicular ways are used for recreational access, although the main access onto the mountain is on existing mining roads into Amasa outside the

boundary of the WSA. As much as 25 percent of the recreational use involves vehicular access. The WSA is currently open for ORV use on 42,130 acres and closed to use on 9,000 areas in the recommended NNL/ ACEC. There is no ORV play activity in the area largely due to topographic restraints.

Land Use Plans

The WSA is BLM-administered public land except for seven State sections (4,478.9 acres). There are no private or split-estate lands in the WSA. The current policy of the State is to maximize economic returns from State lands and to reserve its position regarding exchange of in-held lands (see Chapter 1 in Volume I). In 1986, the Utah State Legislature passed S.C.R. No. 1 opposing any additional wilderness designation in Utah and urging that State lands not be exchanged out of wilderness areas. One of the in-held State sections is leased for grazing. Grazing is the only current activity on these lands.

The Millard County Master Plan (Paul Nelsen Associates, Inc., 1981) does not specifically address wilderness. The county believes that Federal lands in the county should be generally utilized to their greatest economic potential under a multiple-use concept. The Millard County Commission has endorsed the Consolidated Local Government Response to Wilderness (Utah Counties, 1986) that opposes wilderness designation of BLM lands in Utah.

The current BLM planning document for the Notch Peak WSA is the Warm Springs RMP (USDI, BLM, 1987b). Wilderness is not addressed in the Warm Springs RMP. Wilderness designation is part of the BLM multiple-use concept. The BLM land use plan is linked to the Statewide Wilderness EIS through inclusion of the present plan as the No Action/No Wilderness Alternative.

The Notch Peak WSA is in the South Range of the USAF Utah Test and Training Range. The USAF position is that low level military overflights of the Utah Test and Training Range, including the Notch Peak WSA would continue with or without wilderness designation (USAF, 1986).

Socioeconomics

- Demographics

The Notch Peak WSA is located in Millard County approximately 50 miles west of Delta, Utah. From 1970 to 1980, the population of Millard County grew by approximately 28.4 percent to 9,050. A major portion of the Millard County population lives in Delta and Fillmore. Table 7 presents baseline and projected population data for Millard County. It is estimated that between 1980 and 1987 population increased to about 10,415. Population projections for the county indicate that the number of people living in Millard County in the year 2010 will be about 12,900 for about a 43 percent increase over 1980 levels (Utah Office of Planning and Budget, 1987).

Table 7
Baseline and Projected Population and Employment Growth
Millard County

	1980	1990	2000	2010
Population	9,050	11,000	11,600	12,900
Employment	3,645	5,500	6,000	6,700

Source: Utah Office of Planning and Budget, 1987.

- Employment

Table 7 shows the baseline and projected total employment for the county to the year 2010. The government sector (Federal, State, and local) is the most important in terms of employment in the Millard County economy. Farm employment makes up about 26 percent of the total employment in the county. The Intermountain Power Project contributes significantly to employment, while mining has been declining in recent years. Millard County is part of the Central MCD. Table 8 shows the baseline (1980) and projected employment by source for the MCD to the year 2010.

Table 8
Central Multi-County District
Employment[a]

	1980	1990	2000	2010
Agriculture	3,649	3,500	3,600	3,800
Mining	706	700	800	900
Construction	822	1,400	1,800	2,200
Manufacturing	2,047	1,900	2,200	2,600
Transportation, Utilities	589	1,300	1,400	1,500
Trade	2,604	3,400	4,000	4,900
Finance, Insurance, Real Estate	347	400	500	600
Services	1,439	2,300	2,900	3,500
Government	3,919	4,100	4,100	4,900
Nonfarm Proprietors	2,278	2,800	3,300	4,100
Totals	18,400	21,800	24,600	29,000

Source: Utah Office of Planning and Budget, 1987.

[a]Includes Juab, Millard, Piute, Sanpete, Sevier, and Wayne Counties.

In 1980 the leading employment sectors for the MCD were government (21 percent), agriculture (20 percent), and trade (14 percent).

Mining provided approximately 4 percent of the direct employment in the MCD. It is projected that by the year 2010 employment in the MCD will increase by approximately 58 percent. Trade will increase to 17 and services to 12 percent of the total, while the government will decline to 17 percent, agriculture to 11 percent, and mining to 3 percent of the total.

- Sales and Revenues

Economic-related activities in the WSA include mineral exploration, livestock production, and recreation. Table 9 summarizes local sales and Federal revenues from the WSA. Appendix 9 in Volume I identifies the multipliers used to estimate sales and revenues. The WSA has 207 mining claims. Regulations require a $100 annual expenditure per claim for labor and improvements, an undetermined part of which is spent in the local economy. Not all of these claims are current in assessment. Minor amounts of gold and tungsten have been mined inside the WSA, although no production figures are known. Mineral and energy resource production from the WSA has contributed only slightly to local employment or income.

Table 9
Sales and Revenues

Source	Estimated Annual Local Sales[a]	Estimated Annual Federal Revenues
Oil and Gas Leases	0	$4,180
Mining Claim Assessment	$20,700	0
Livestock Grazing	$67,040	$5,162
Recreational Use	$1,025	0
Firewood Harvest	$ 1,125[b]	$ 75
Total	$89,890	$9,417

Sources: BLM File Data; and Appendix 9 in Volume I.

[a]Local sales represent money potentially spent. They do not account for the total income that would be generated by these expenditures.

[b]This is the value of the forest products to those who harvest them and may not be directly related to local sales.

Fourteen livestock operators have a total grazing privilege of estimated 3,352 AUMs within the WSA. If all this forage were utilized it would account for $67,040 of livestock sales and $16,760 of ranchers' returns to labor and investment. Present harvest of forest products from the WSA is estimated as 10 to 15 cords of firewood valued at about $75 per cord for a total value of about $1,125 per year. These harvests are for personal use and are insignificant to the local economy and only of minor significance to those involved in the harvest. The WSA's nonmotorized recreational use and related local expenditures are low. These expenditures are insignificant to both the local economy and individual businesses. The WSA's motorized recreational use and related local expenditures are also low and insignificant to both the local economy and individual businesses. The actual amount of income generated locally from recreational use in the WSA is unknown. However, an approximate range of expenditures can be deduced (Dalton 1982). This study indicates that the Statewide average local expenditures per recreational visitor day for all types of recreation in Utah are approximately $4.10. The recreational use for Notch Peak WSA is estimated as about 250 visitor days per year.

The WSA generates Federal revenues from mineral leases and livestock sources (refer to Table 9). Oil and gas leases in the WSA cover approximately 2,090 acres. At $2 per acre, lease rental fees generate up to $4,180 of Federal revenues annually. Half of these monies are allocated to the State, which then reallocates these revenues to various funds, the majority of which are related to energy development and mitigation of local impacts of energy and mineral development. Average actual livestock use and, therefore, revenues generated from grazing in the WSA are unknown; however, the permittees in the WSA can use up to an estimated 3,352 AUMs per year. Based on a $1.54 per AUM grazing fee, the WSA can potentially generate $5,162 of grazing fee revenues annually, 50 percent of which would be allocated back to the local BLM District for the construction of rangeland improvements.

ENVIRONMENTAL CONSEQUENCES OF ALTERNATIVES

This section describes the environmental consequences of implementing the alternatives. The analysis is based on the BLM management actions and anticipated activities presented in the Introduction to Volume II and the Description of the Alternatives for the Notch Peak WSA.

No Action/No Wilderness Alternative

- Impacts on Wilderness Values

Because the WSA would not be designated wilderness with this alternative, the identified wilderness values would not receive the degree of protection afforded

by application of the Wilderness Management Policy (BLM Manual 8560). Wilderness values in the WSA would be somewhat protected by limitations placed on potential surface-disturbing activities by the BLM Land Use Plan (i.e., VRM Class II management on 5,230 acres, management under oil and gas leasing Category 3 [no surface occupancy] on 9,000 acres, and ORV closure on 9,000 acres).

The only development expected in the foreseeable future is a guzzler development where naturalness and opportunities for solitude and primitive recreation would be reduced in quality on 0.002 percent of the WSA (1 acre). Because no other development is anticipated, no loss of special features including bristlecone pine, geologic structures, special status species or scenic quality is anticipated. Wildlife special features would benefit from the guzzlers.

Continued vehicular activity on the 20 miles of ways in the WSA would occasionally detract from opportunities for solitude and primitive recreation.

Visitation, including use of vehicles on the ways, is expected to increase at a rate of 2 to 7 percent per year in the future. The WSA is large enough to accommodate increased use without permanent loss of wilderness values.

Overflights by military aircraft would continue to be an occasional annoyance that would detract from the opportunities for solitude and primitive recreation in the WSA.

Disturbance that would occur over the long term and, therefore, the long-term loss of wilderness values that would occur is not accurately known. Loss would occur as intrusions increase.

Conclusion: Wilderness values would not be protected by wilderness designation. In the foreseeable future, only a slight reduction in the quality of naturalness and opportunities for solitude and primitive recreation would be expected. Special features would not be adversely affected.

- Impacts on Livestock Management

Domestic livestock grazing would continue as authorized in the House Range MFP. The estimated 3,352 AUMs currently allocated in the WSA are controlled by 14 livestock permittees. Existing roads and ways would continue to be used to manage livestock and to establish and supply the sheep camps in and surrounding the WSA. Predator control would continue under State law and APHIS regulations. Therefore, few, if any, changes in livestock management, including predator control, are expected.

Conclusion: The No Action/No Wilderness Alternative would not adversely affect livestock management in the WSA.

- Impacts on Recreation

The future trends in recreational use of the WSA are unknown. However, based on a review of several projections (UDNRE, ORA, 1980; UDNRE, DPR, 1985; Utah Office of Planning and Budget, 1984; Jungst, 1978; Hof and Kaiser, 1981; and Cordell and Hendee, 1982) it is estimated that outdoor recreation in Utah will increase at between 2 and 7 percent per year over the foreseeable future. At this rate, overall recreational use in the WSA would increase from 250 current visitor days per year to between 470 and 2,200 visitor days by the year 2020. The use of vehicles as a means of access for recreational activities would continue on 20 miles of way that would be open to use of vehicles. This would degrade some users primitive recreation experience. Vehicular ways into Sawtooth Cove and Miller Cove would shorten hiking distances to Notch Peak from Hell'n Maria and Sawtooth Canyons.

Conclusion: Opportunities for vehicular recreation such as hunting and sightseeing on 20 miles of ways would be maintained. The quality of the primitive experience may decline for some users.

All Wilderness Alternative (51,130 Acres)

- Impacts on Wilderness Values

Designation and management of all 51,130 acres as wilderness would preserve the area's wilderness values of naturalness, outstanding opportunities for solitude and primitive recreation, and special features. Under this alternative, the potential for surface-disturbing activities that could impair wilderness values would be eliminated through management under VRM Class I (which generally allows for only natural ecological change), through closure of the area to ORV use, and through closure of the entire area to future mineral leasing and location.

Naturalness would be protected on the entire area. Outstanding opportunities for solitude would be protected on the approximately 28,130 acres that meet

and 23,000 acres that do not meet the Wilderness Act standards. Outstanding opportunities for primitive and unconfined recreation would be protected on 28,130 acres that meet and 23,000 that do not meet the Wilderness Act standards. The special features in this WSA (i.e., geologic features, bristlecone pine stands, endangered and sensitive species, and Class A scenery) would also be protected.

Visitor use would be primitive in nature. Use relative to the size of the area would probably be low (refer to the Recreation section), and the area would be managed to protect wilderness values. Therefore, no significant affect on wilderness values would be expected from recreational use.

The only development expected in the foreseeable future is guzzler development which would be done in a manner that would meet wilderness management standards. Even so, naturalness and opportunities for solitude and primitive recreation would be reduced in quality on 0.002 percent (1 acre) of the WSA.

Vehicular use of 20 miles of ways would cease, improving opportunities for solitude and primitive recreation.

Overflights by military aircraft would continue to be an occasional annoyance that would detract from the opportunities for solitude in the WSA.

Conclusion: All wilderness values would be preserved.

- Impacts on Livestock management

Present domestic livestock grazing would continue as authorized in the Warm Springs RMP. The estimated 3,352 AUMs currently allocated in the WSA are controlled by 14 livestock permittees.

Rangeland improvements (1 mile of fence and a cattleguard) would be maintained as in the past, based on practical necessity and reasonableness. Livestock grazing would continue, but motorized activities in connection with grazing would be restricted after designation and could inconvenience operators. Vehicular access on the 20 miles of existing ways would be restricted. Restrictions on the ability to haul water and supply six sheep camps would be an inconvenience for livestock operators. This would make utilization more difficult and could increase the cost of management. Predator control methods would be restricted, and increases in sheep losses to predators would result. Only a slight increases in predation is expected because several predator control methods would be allowed.

Conclusion: Restrictions on access would be an inconvenience to livestock operators. Management costs and sheep losses to predators would increase slightly.

- Impacts on Recreation

Primitive-type recreational use of the WSA is estimated to increase between 2 to 7 percent per year in relation to population increases and current trends of recreational use. Because vehicular use would be eliminated, overall recreation use levels would probably decline initially. Management provided through a Wilderness Management Plan would control future recreation use to maintain the quality of the primitive recreation experience. Visitor use presently attributed to vehicular hunting and sightseeing could continue from foot or on horseback. This would improve some people's recreational experience, but reduce the quality of the experience for others. The roads into Amasa Valley would remain open, and hiking access from that area would not change. Because the WSA is not an ORV destination area, ORV use would not experience an overall decline in the vicinity of the WSA. As primitive recreation use increases, commercial operations based on primitive recreational activities could benefit from wilderness designation.

Conclusion: Opportunities for primitive recreation would be preserved. Opportunities for vehicular recreation such as hunting and sightseeing on 20 miles of ways would be lost.

Large Partial Wilderness Alternative (Proposed Action) (28,000 Acres)

- Impacts on Wilderness Values

Wilderness designation of 28,000 acres would contribute to the preservation of the area's wilderness values. In the portion of the WSA that would be designated, the potential for surface-disturbing activities that could impair wilderness values would be reduced through management under VRM Class I (which generally allows for only natural ecological change), through the ORV closure, and through closure of the entire area to future mineral leasing and location. Wilderness values would be preserved in the designated area. Naturalness (all 28,000 acres appear natural), outstanding opportunities for solitude (all 28,000 acres meet the standard), primitive and

unconfined recreation (all 28,000 acres meet the standard), and the WSA's special features (including geologic features, bristlecone pine, Class A scenery, and special status species) would be protected. The only development anticipated in the WSA is guzzler development in the designated area which would be designed to be compatible with wilderness management criteria. Even so, a slight reduction in quality of naturalness and opportunities for solitude and primitive recreation would occur on 1 acre. Animal special features would benefit from the guzzlers. Vehicular use of 7 miles of ways would cease in the designated area, improving opportunities for solitude and primitive recreation in this area. Although recreational use would increase use relative to the size of the area would be low. Therefore, no significant affect on solitude and primitive recreation values would be expected from increased recreation.

In the 23,130-acre nondesignated area, the only conflicts with wilderness values expected in the foreseeable future are continued and increased vehicular activity on 13 miles of ways. During the periods of activity, the visual and audible disturbance from vehicle use would detract from opportunities for solitude and primitive recreation on adjacent portions of the WSA.

Overflights by military aircraft would continue to be an occasional annoyance that would detract from the opportunities for solitude in both the designated and nondesignated portions of the WSA.

Disturbance that would occur in the nondesignated area over the long term and, therefore, the long-term loss of wilderness values that would occur is not accurately known. Loss would occur as intrusions increase.

Conclusion: Wilderness values would be preserved in the designated area which is about 55 percent of the WSA. In the foreseeable future, only a slight reduction in the quality of naturalness and opportunities for solitude and primitive recreation would occur in the WSA. Special features would not be adversely affected.

- Impacts on Livestock Management

The effect of designation of 28,000 acres of the WSA as wilderness on livestock management would be similar to those described for the All Wilderness Alternative. Of the estimated 3,352 AUMs allocated, 1,038 would be within the designated portion of the WSA and 2,314 within the nondesignated portion. There are 7 miles of existing ways in the area that would be designated wilderness and restrictions on vehicular use in this area could inconvenience livestock operators. There are 13 miles of existing vehicular ways, including those in the Sawtooth Cove area, that would not be within the area designated wilderness; therefore, motorized access for hauling water, establishing and supplying sheep camps, and managing livestock would be maintained in much of the area.

The affects of the Large Partial Wilderness Alternative on predator control and predation on sheep would be similar to those described for the All Wilderness Alternative.

Conclusion: Restrictions on access would be an inconvenience to livestock operators. Management costs and sheep losses to predators would increase slightly.

- Impacts on Recreation

Although visitor use is currently low (about 250 visitor days a year), the WSA has outstanding primitive recreational values. The highest quality areas would be recognized, managed, and protected under this alternative. Approximately 7 miles of ways in the designated area would be closed to ORV use. Approximately 13 miles of existing ways outside the designated area would remain open to vehicular use for recreational access. Both primitive and vehicular recreational use would increase at a rate of about 2 to 7 percent annually. The quality of some users' primitive recreational experience could be reduced by ORV use in the nondesignated portion of the unit. Vehicular ways in Sawtooth and Hell'n Maria Canyons would remain open under this alternative and would continue to be used for access to these popular hiking areas. This would degrade some users' primitive recreational experience, but would probably be seen as an advantage to others.

Conclusion: Opportunities for primitive recreation would be preserved in the designated area. In the nondesignated area, vehicular access would continue on 13 miles of ways. The quality of the primitive recreation experience may decline in the nondesignated area for some users.

Small Partial Wilderness Alternative (9,000 Acres)

- Impacts on Wilderness Values

Wilderness designation of 9,000 acres would contribute to the preservation of the area's wilderness characteristics. Management of the 9,000-acre area that would be designated would be similar to that proposed by the Warm Springs RMP, but would be congressionally rather than administratively mandated. The potential for surface-disturbing activities that could impair wilderness values would be reduced through management under VRM Class I (which generally allows for only natural ecological change), through the ORV closure, and through closure of the area to future mineral leasing and location. Impacts to wilderness values in the designated area would be the same as under the All Wilderness Alternative on the 9,000 acres that would be designated wilderness. Size, naturalness (all 9,000 acres appear natural), outstanding opportunities for solitude (all 9,000 acres meet the standard), primitive and unconfined recreation (all 9,000 acres meet the standard), and the WSA's special features (including Notch Peak, bristlecone pine, Class A scenery, and special status species) would be protected. The only expected development in the designated area would be guzzlers which would be designed to meet wilderness management standards. Even so, temporary reduction in naturalness and opportunities for solitude and primitive recreation would occur on 0.002 percent of the WSA until reclamation is complete. In the designated area, visitor use would be primitive. Relative to the size of the area, use would be low, and would be controlled through a wilderness management plan. Therefore, no significant effect on solitude and primitive recreation values would be expected from increased primitive recreation.

The only conflict with wilderness values expected in the foreseeable future in the 42,130-acre nondesignated area would be continued vehicular activity on the 20 miles of ways. During the periods of activity, the visual and audible disturbance from vehicle use would detract from opportunities for solitude and primitive recreation on adjacent portions of the WSA.

Overflights by military aircraft would continue to be an occasional annoyance that would detract from the opportunities for solitude in the WSA.

Disturbance that would occur over the long-term in the nondesignated area and, therefore, the long-term loss of wilderness values that would occur is not accurately known. Loss would occur as intrusions increase.

Conclusion: Wilderness values would be preserved in the designated area which is about 18 percent of the WSA. In the foreseeable future, only a slight reduction in the quality of naturalness and opportunities for solitude, and primitive recreation is anticipated in the WSA. Special features would not be significantly affected.

- Impacts on Livestock Management

The effects of designation of 9,000 acres of the WSA as wilderness on domestic livestock grazing would be essentially the same as with the No Action/No Wilderness Alternative. Of the estimated 3,352 AUMs allocated in the WSA, 310 would be within the designated portion of the WSA and 3,042 within the nondesignated portion. No effect on the management of livestock grazing is expected under this alternative. There are currently no vehicular ways or motorized activities in connection with grazing in the portion of the WSA that would be designated; therefore, no changes in current use of vehicles for livestock management are expected. Predator control would be conducted according to APHIS guidelines and State law on 83 percent of the WSA and increases in predation are unlikely.

Conclusion: The Small Partial Wilderness Alternative would not affect livestock management in the WSA.

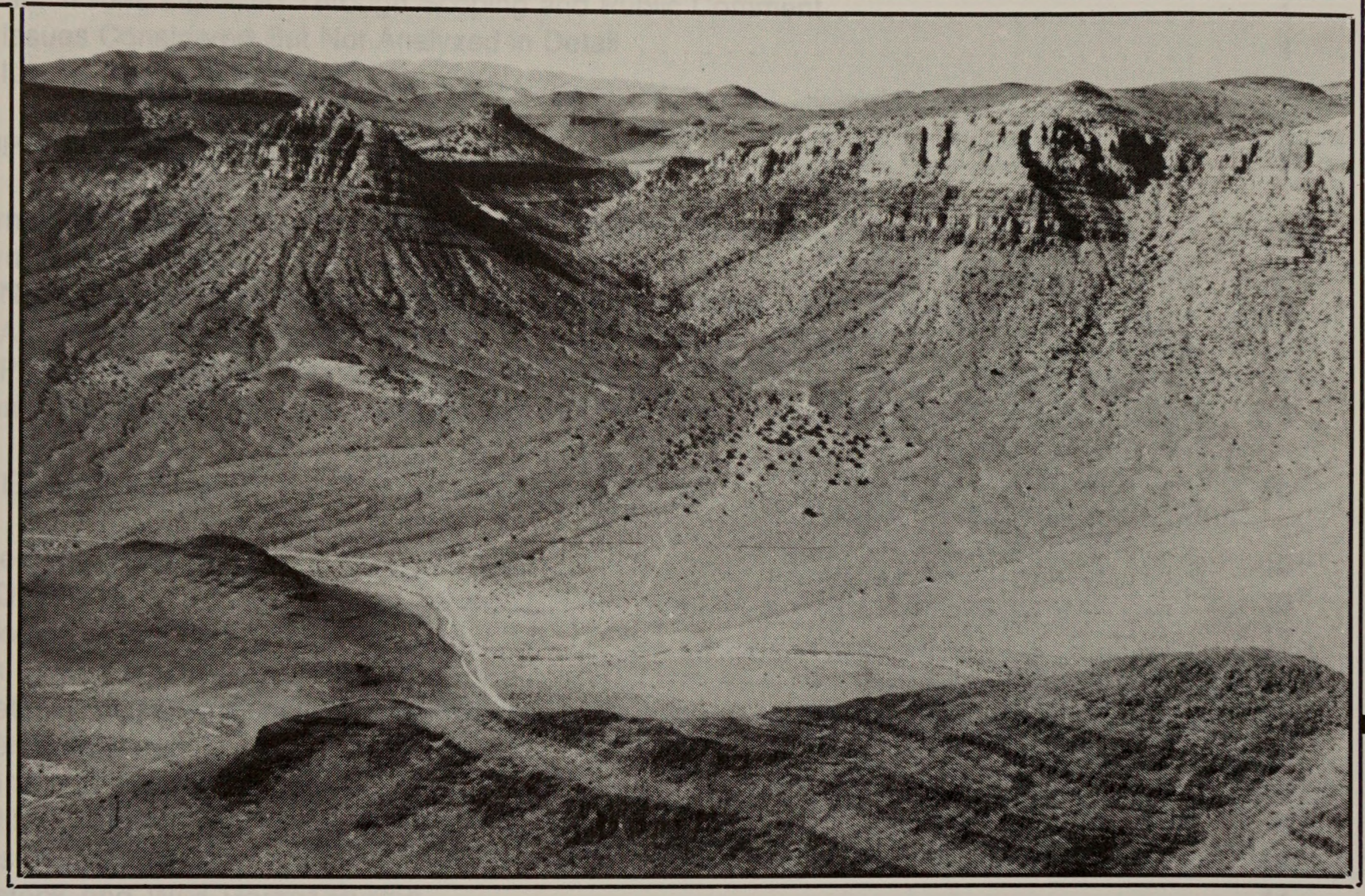
- Impacts on Recreation

Although visitor use is currently low (about 250 visitor days a year), the WSA has outstanding primitive recreational values. Much, although not all, of the highest quality area would be recognized, managed, and protected under this alternative. Overall the impacts would be approximately the same as with the No Action/No Wilderness Alternative because of the similar management practices that would be implemented whether designation of an NNL/ACEL or wilderness occurs. Recreational use increases would be the same as for the No Action/No Wilderness Alternative. Although 9,000 acres would be designated would be closed to ORV use, approximately 20 miles of existing ways outside the designated area would remain open to vehicular use for recreational access under this alternative. The quality of some users' primitive recreational experience would be reduced by ORV use in the nondesignated portion of the unit. As with the

No Action/No Wilderness and Large Partial Wilderness Alternatives, the vehicular ways in Sawtooth and Hell'n Maria Canyons would remain open and would continue to be used as access to the popular hiking areas. With this alternative, portions of existing hiking trails would also remain open to vehicular use, which could result in conflicts with primitive use.

Conclusion: Primitive recreational opportunities would be preserved on 9,000 acres. Opportunities for vehicular recreation such as hunting and sightseeing on 20 miles of ways would be maintained. The quality of the primitive recreation experience may decline in the nondesignated area for some users.

King Top WSA



KING TOP WSA

TABLE OF CONTENTS

INTRODUCTION 1

General Description of the Area 1
Changes for the Final EIS 1
Specific Issues Identified Through Scoping and Public Comment 1
Issues Considered But Not Analyzed in Detail 1
Issues Analyzed in Detail 3

DESCRIPTION OF THE ALTERNATIVES 3

Alternatives Considered and Eliminated from Detailed Study 3
Alternatives Analyzed 3
No Action/No Wilderness Alternative (Proposed Action 3
All Wilderness Alternative 5
Partial Wilderness Alternative 7
Summary of Environmental Consequences 10

AFFECTED ENVIRONMENT 10

Wilderness Values 10
Air Quality 12
Geology and Topography 12
Soils 12
Vegetation Including Special Status Species 12
Water Resources 13
Mineral and Energy Resources 13
Wildlife Including Special Status Species 14
Forest Resources 14
Livestock and Wild Horses/Burros 14
Visual Resources 15
Cultural Resources 15
Recreation 16
Land Use Plans 16
Socioeconomics 16

ENVIRONMENTAL CONSEQUENCES OF ALTERNATIVES 18

No Action/No Wilderness Alternative (Proposed Action) 18
All Wilderness Alternative 19
Partial Wilderness Alternative 20

KING TOP WSA

TABLE OF CONTENTS

KING TOP WSA

(UT-050-070)

INTRODUCTION

General Description of the Area

The King Top WSA contains approximately 84,770 acres of public land in the southwestern portion of Millard County, Utah. It is immediately south of the Notch Peak WSA and is separated from it by Highway 50 which forms a portion of the northern boundary. Delta, approximately 50 road miles northeast of the WSA, is the closest community. Elevations within the WSA range from 5,000 feet on the valley floors to over 8,000 feet at the highest points. The bulk of the WSA is desert shrub and pinyon-juniper woodland. Annual temperatures range from -20 degrees Fahrenheit (F) to 106 degrees F, depending on season and elevation. The area has low precipitation (8 to 12 inches annually) and low relative humidity.

Changes for the Final EIS

In addition to the changes noted in the Introduction to Volume II, the following changes specific to the WSA have been made since publication of the Draft EIS.

1. The boundary of the WSA has been modified to exclude one section of State owned lands (T. 21 S., R. 16 W., sec. 2) to correct an error in the Draft EIS maps. The boundary was modified to coincide with the boundaries shown in the inventory document.

2. The boundary of the Partial Wilderness Alternative has been modified to exclude State lands in three locations (T. 21 S., R. 16 W., sec. 32; and T. 21 S., R. 15 W., secs. 2 and 32). Inclusion of these lands in the Draft EIS was in error.

3. Descriptions of the No Action/No Wilderness and Partial Wilderness Alternatives have been revised to coincide with the Warm Springs Resource Area RMP, which has replaced the House Range MFP since publication of the Draft EIS. The main feature of the RMP for the King Top WSA is the creation of the 1,920-acre Fossil Mountain Historic Site/Area of Critical Environmental Concern (HS/ACEC). The RMP proposes that this area be closed to surface occupancy for oil and gas leases.

4. The anticipated surface disturbance presented in the Draft EIS (266 acres) was based on the assumption that all mineral and other resources potentially within the WSA would be developed sometime in the future without consideration of technical or economic feasibility. In response to public comments relative to the feasibility within the foreseeable future (see Appendix 6 in Volume I). This resulted in a reduction of surface disturbance estimates from the 266 acres reported in the Draft EIS to 5 acres of surface disturbance for the Final EIS.

5. Development of a well, 4 miles of pipeline, six water troughs, 2 miles of fence, one corral, one livestock reservoir, and nine guzzlers was anticipated in the Draft EIS. Most of these projects have been dropped from consideration since publication of the Draft EIS. The Final EIS assumes that nine guzzlers would be built for wildlife habitat improvement. Five acres of surface disturbance are estimated to result from construction of the guzzlers.

Specific Issues Identified Through Scoping and Public Comment

- Issues Considered But Not Analyzed in Detail

In addition to the issues discussed and eliminated from further consideration in the Introduction to Volume II (i.e., impacts on air quality, geology and topography, soils, water rights, and land use plans and policies), the following issues or impacts specific to the King Top WSA were considered but are not analyzed in detail in the Final EIS for the reasons described below.

1. Vegetation Including Special Status Species: Estimates of surface disturbance without wilderness designation have been revised downward from the 266 acres reported in the Draft EIS to no mineral-related surface disturbance in the Final EIS. Only 5 acres of

STATEWIDE POCKET MAP WSA NO. 10 SEE VOL.I

surface disturbance related to construction of nine guzzlers is projected. Given this new scenario, the impacts of direct disturbance of vegetation would be reduced and would not be significant with any of the alternatives (less than 0.1 percent of the WSA). There are no threatened, endangered, or proposed threatened or endangered plant species known to occur within the WSA. In any event, BLM would require site-specific clearances of potentially disturbed areas and consult with FWS concerning impacts on threatened or endangered plant species. New roads would not be required for the guzzlers and they would be placed in areas away from special status plant species. Therefore, impacts on vegetation are not analyzed in detail for the King Top WSA.

2. Water Resources: There are no springs or perennial streams in the WSA. Therefore, impacts to water uses and quality is not analyzed in the Final EIS.

3. Mineral Resources: The public has expressed concern that wilderness designation would interfere with or prevent mineral exploration, development, and production. There is one post-FLPMA oil and gas lease within the WSA. However, potential oil and gas deposits are small with a very low certainty that they exist.

Even though there are 43 mining claims in the WSA, the projected locatable mineral deposits are small and or could not be economically developed in the foreseeable future (see Appendix 6 in Volume I). More accessible deposits of salable minerals exist outside the WSA. For these reasons, mineral exploration or development would not occur in the foreseeable future with or without wilderness designation. Therefore, impacts on mineral and energy exploration and production are not analyzed detail in the Final EIS.

4. Wildlife Including Special Status Species: The public is concerned that without wilderness designation mineral or other developments would destroy wildlife habitat and lead to reductions in wildlife populations. They are also concerned that use of ORVs would disturb wildlife and destroy habitat. The King Top WSA provides for a variety of animal species, but populations are low and no one species can be described as abundant. Two endangered and six other special status species may be found in the WSA. Nine guzzlers are proposed and could be installed with any of the alternatives. Because no mineral developments are expected in the WSA in the foreseeable future, wildlife habitats would not be lost. Vehicle use is mainly on the vehicular ways and is associated with other recreational pursuits such as hunting. The WSA is not an ORV play area. Therefore, impacts on wildlife habitat and populations are not significant issues for the EIS.

5. Forest Resources: The only forest resources in the WSA are 14,760 acres of pinyon-juniper woodland. Demand is low and because of steep slopes only about 5,500 acres are considered suitable for harvest. For these reasons, impacts on forest resources are not significant issues for analysis in the Final EIS.

6. Visual Resources: As discussed above for vegetation, only 5 acres of surface disturbance for construction of guzzlers is projected for the WSA in the Final EIS. Guzzlers are minor intrusions that would be designed and installed in keeping with wilderness protection criteria and or visual resource management objectives. Roads are not required; therefore, visual resources would not be significantly affected.

7. Cultural Resources: Cultural resources could be destroyed by surface-disturbing projects, use of vehicles or vandalism. However, only three cultural resource sites have been recorded in the King Top WSA. No mineral-related surface disturbance is projected. Vehicle use is mainly on the ways inside the WSA. Additionally, inventories for the purpose of site recordation and mitigation of impacts would take place prior to any surface disturbance in the future. Given these conditions, impacts on cultural resources are not significant issues for the King Top WSA.

8. Economic Conditions: The public, including State and local government, is concerned that wilderness designation would preclude mineral or other economic developments and adversely affect local economic conditions. Others believe that primitive recreation use would increase following wilderness designation and would contribute to the local economy.

There are no existing or anticipated mineral developments or proposals for lands or realty activities which would be impaired with or without wilderness designation. Because no economic developments are expected and because recreational use is projected to increase to a maximum of only 2,600 visitor days per year by the year 2020 (2 to 7 percent increase per year) and would contribute only $10,660 annually to the local economy ($4.10 per visitor day), impacts on economic condition are not significant issues for the King Top WSA.

KING TOP WSA

- Issues Analyzed in Detail

The significant issues for the King Top WSA are:

1. Impacts on the wilderness values of naturalness, opportunities for solitude and primitive recreation, and special features.

2. Impacts on livestock management, including vehicle access and predator control.

3. Impacts on recreational use of the WSA including tradeoffs between primitive recreational use and recreation based on vehicular access.

Comments made during the public comment period for the Draft EIS included the following:

1. Questions on inclusion or deletion of benchland portions of the WSA in the BLM proposed action.

2. A suggested 50,000-acre Partial Wilderness Alternative.

3. Questions on BLM's assessment of wilderness values.

4. Need for rationale for the BLM proposed action.

5. BLM's application of criteria for alternatives and rationale.

6. Questions on BLM's ability to manage ORVs.

7. Need for additional resource inventories.

8. Inadequacy of the geology section of the EIS.

9. Underrating of mineral values by BLM.

10. Oil and gas leases as a manageability problem.

11. The need for future livestock range improvements.

12. The affect of restrictions on predator control methods.

13. Need to assess affects on the deserted town of Ibex.

14. Inconsistency between ratings of opportunities for solitude, primitive recreation, and the description of ORV use in the WSA.

15. The need to designate complete ecosystems to the NWPS.

16. Potential affects on a communication site.

17. Editorial problems in the description of the Partial Wilderness Alternative.

See Volume VII-B for responses to general comments applicable to all WSAs and/or the Statewide analysis and Volume VII-C, Section 10, for responses to specific comments about the King Top WSA.

DESCRIPTION OF THE ALTERNATIVES

Alternatives Considered and Eliminated from Detailed Study

A general suggestion to consider a partial alternative for this WSA was received during scoping for the Draft EIS. A partial alternative is included in the analysis.

Partial Wilderness Alternatives of approximately 55,000 acres that would exclude land on the north, northeast, and southwest fringes of the WSA are suggested in the public comments on the Draft EIS. These alternatives are not analyzed in detail because they do not differ appreciably from the 53,044-acre partial analyzed in the Final EIS.

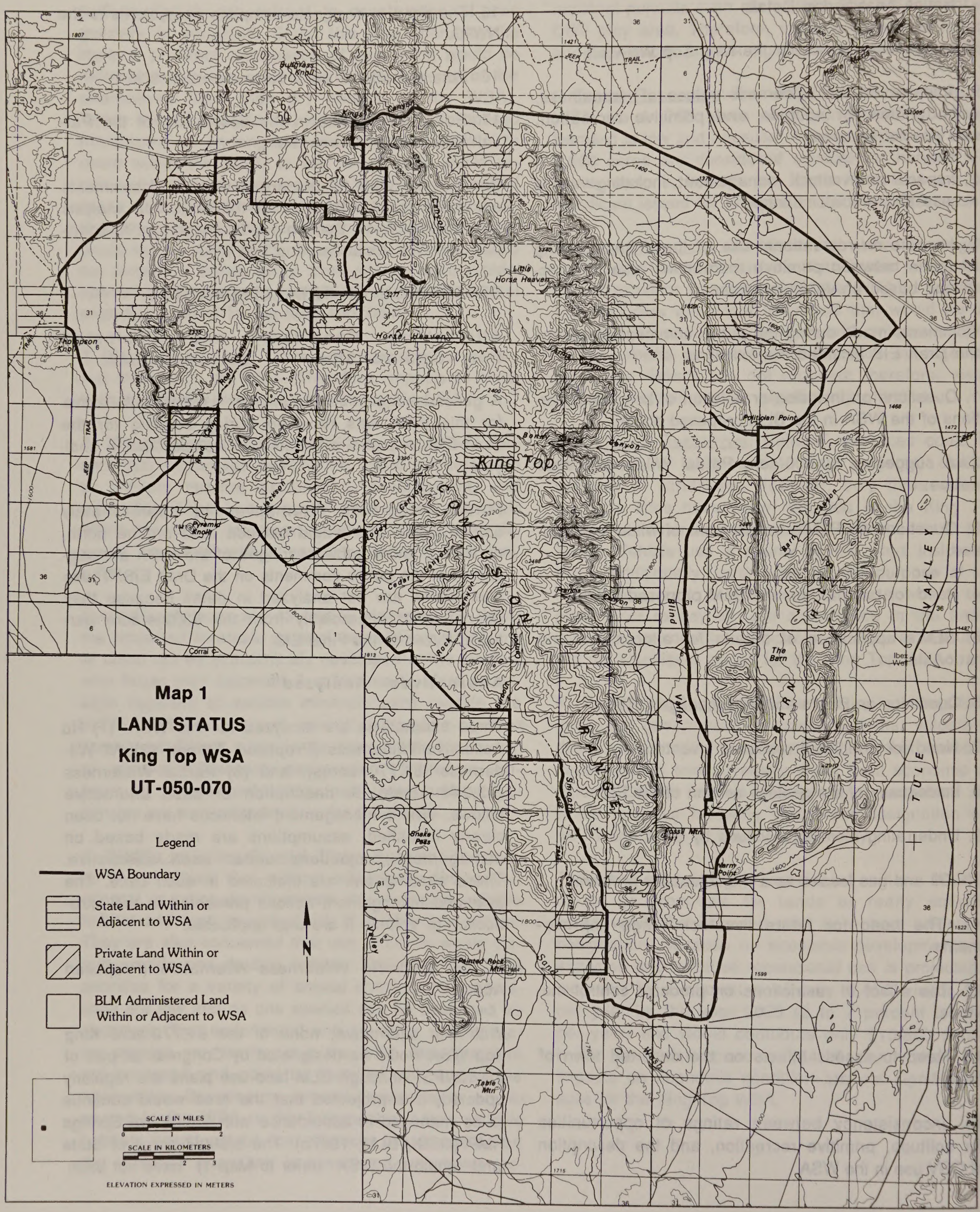
Alternatives Analyzed

Three alternatives are analyzed for this WSA: (1) No Action/No Wilderness (Proposed Action); (2) All Wilderness (84,770 acres); and (3) Partial Wilderness (53,044 acres). A description of each alternative follows. Where management intentions have not been clearly identified, assumptions are made based on management projections under each alternative. These assumptions are indicated in each case. The assumed management actions presented in the Introduction to Volume II are also applicable.

- No Action/No Wilderness Alternative (Proposed Action

With this alternative, none of the 84,770-acre King Top WSA would be designated by Congress as part of the NWPS. Although BLM land use plans are regularly updated, it is projected that the area would continue to be managed in accordance with the Warm Springs RMP (USDI, BLM, 1987b). The 6,660.7 acres of State land within the WSA (refer to Map 1) have not been

KING TOP WSA



Map 1

LAND STATUS

King Top WSA

UT-050-070

Legend

- WSA Boundary
- State Land Within or Adjacent to WSA
- Private Land Within or Adjacent to WSA
- BLM Administered Land Within or Adjacent to WSA

ELEVATION EXPRESSED IN METERS

identified in the RMP for special Federal acquisition through exchange or purchase. State lands are analyzed as remaining under State ownership. Refer to Volume I for further information on State in-holdings.

• Management Conditions and Constraints

All 84,770 acres would remain open to mineral location, leasing (with standard and special stipulations), and sale. Development work, extraction, and patenting would be allowed on 43 existing mining claims (860 acres) and future mining claims. Development would be regulated by unnecessary or undue degradation regulations (43 CFR 3809). One existing post-FLPMA oil and gas lease (approximately 800 acres) and new leases could be developed under leasing Category 1 (standard stipulations) on about 82,850 acres and Category 3 (no surface occupancy) on about 1,920 acres. Although mineral resources would be managed as described above, mineral exploration and development are not projected for the WSA in the foreseeable future because the level of known resources and their probability of development are too low to support a development assumption. Appendix 6 in Volume I explains the mineral exploration and development projections.

The present domestic livestock grazing use of the 84,770-acre area of the WSA would continue as authorized in the RMP (6,920 AUMs). Use and maintenance of 3 miles of fence and one corral would be allowed. The 30 miles of ways in the WSA would remain open for livestock management purposes including access to establish and support sheep camps in four locations and for hauling of water.

The existing guzzler would be maintained and nine additional guzzlers would be installed to improve wildlife habitat.

The 84,770 acres, including 30 miles of vehicular ways, would remain open for vehicular use.

The entire 84,770-acre area would continue to be open to woodland product harvest. Limited noncommercial harvest of forest products would continue on 5,500 acres woodland considered suitable for harvest.

The area would be managed under VRM Class III on 1,160 acres and Class IV on 83,610 acres.

• Action Scenario

It is projected that implementation of the No Action/No Wilderness Alternative would result in 5 acres of surface disturbance from construction of water guzzlers. New roads would not be required. No surface disturbance is anticipated from locatable or leasable minerals exploration or development in the foreseeable future (see Appendix 6 in Volume I). No other livestock, wildlife habitat, or watershed improvement projects are planned.

No disturbance from ORV activity is anticipated due to terrain constraints and because this is not an ORV destination area.

Recreational use is projected to increase over the current estimated use of 300 annual visitor use days at a rate of 2 to 7 percent per year. Approximately 111 of these visitor use days are attributed to activities involving vehicular access on about 30 miles of existing ways and 189 visitor use days are attributed to primitive activities. The increase would maintain the same ratio.

• All Wilderness Alternative

With this alternative, all 84,770 acres of the King Top WSA would be designated by an act of Congress as part of the NWPS (refer to Map 2). The WSA would be managed in accordance with the BLM Wilderness Management Policy (BLM Manual 8560) to preserve its wilderness character.

The policy of the State is to reserve its position regarding exchange of in-held lands within any particular WSA (see Chapter 1 in Volume I). Based on this policy regarding exchange of State lands, it is assumed that State lands would remain under existing ownership. There are 11 State sections (6,660.7 acres) within the WSA (refer to Map 1 and Appendix 3 in Volume I). No private or split-estate lands are located in the WSA. The figures and acreages given with this alternative are for Federal lands only.

• Management Conditions and Constraints

After wilderness designation, all 84,770 acres would be withdrawn from location and closed to new mineral leasing and sale. Development work, extraction, and patenting would be allowed to continue on that portion of the approximately 43 existing mining claims (860 acres) that may be

KING TOP WSA

R. 16 W. R. 15 W. R. 14 W.

T. 20 S.

T. 21 S.

T. 22 S.

T. 23 S.

Map 2
ALL WILDERNESS ALTERNATIVE
King Top WSA
UT-050-070

Legend

All Wilderness Alternative (84,770 acres)

N

SCALE IN MILES

SCALE IN KILOMETERS

ELEVATION EXPRESSED IN METERS

determined to be valid. Development would be regulated by unnecessary or undue degradation guidelines (43 CFR 3809) with concern for wilderness values. One existing post-FLPMA oil and gas lease (involving about 800 acres) would be phased out upon expiration unless a find of oil or gas resources in commercial quantities is shown. Exploration or development of mineral resources is not expected following designation because economically recoverable deposits have not be demonstrated in the WSA.

Present domestic livestock grazing for both sheep and cattle would be allowed to continue as authorized in the House Range MFP. The estimated 6,920 AUMs in the WSA would remain available to livestock as presently allotted. After designation, existing rangeland facilities consisting of 3 miles of fence and one corral would be used and maintained in the same manner as in the past, based on practical necessity and reasonableness. Some restrictions on access would be required to protect wilderness values. Use would be allowed on a limited basis by permit for livestock management activities. A herd of about 35 wild horses would be allowed to remain in the WSA.

The entire 84,770-acre area would be closed to ORV use except for users with valid existing rights if approved by BLM in accordance with 43 CFR 8560 provisions. About 30 miles of existing vehicular ways would not be available for vehicular use except as indicated above. Many of these ways are associated with livestock management activities and use would be allowed on a limited basis by permit for livestock management activities. About 12 miles of the WSA's northern boundary parallel U.S. Highway 6/50 and most of the remaining boundary (about 41 miles) follows existing gravel and dirt roads or jeep trails that would remain open to vehicular travel. About 8 miles of existing road, which provide access to and beyond one State section, would be cherry-stemmed, as well as 1.25 miles of existing road near Politician Point. Both of these cherry-stemmed roads would remain open to vehicular traffic and directed by BLM Wilderness Management Guidelines (USDI, BLM, 1982).

- Action Scenario

Five acres of surface disturbance is projected for construction of nine guzzlers. No mineral exploration or development on existing claims or leases is anticipated. New mining claim location and mineral leasing in the WSA would not be allowed. No other rangeland, wildlife habitat, or watershed projects are planned following wilderness designation.

No disturbance from ORV activity is projected due to management and terrain because this is not an ORV destination area.

Primitive-type recreation is anticipated to increase over the current estimated use of 188 visitor days annually at a rate of 2 to 7 percent per year. Vehicular use would cease.

- Partial Wilderness Alternative

With this alternative, 53,044 acres of the King Top WSA would be designated as wilderness (refer to Map 3). The objective of this alternative is to analyze as wilderness those portions of this WSA that have the best wilderness values. Wilderness values are of a higher quality in areas where outstanding opportunities for solitude and or primitive recreation exist, preferably in combination with special features. In forming this alternative, the portions of the WSA with outstanding opportunities for solitude, and or primitive recreation and special features were included where possible within a manageable boundary.

The 53,044 acres analyzed as wilderness under this alternative include the central, high-elevation portion of the WSA. The 31,726-acre flatland and foothill fringe areas within the WSA, but outside of the portion designated as wilderness, contain the existing livestock developments and 24 of the 30 miles of existing ways, and would be managed in accordance with the Warm Springs RMP as described for the No Action/No Wilderness Alternative. The 53,044-acre area designated as wilderness would be managed in accordance with the BLM Wilderness Management Policy (BLM Manual 8560) as described in the All Wilderness Alternative.

Based on the State policy regarding exchange of State lands, it is projected that State lands would remain under existing ownership (see Chapter 1 in Volume I). There are four State sections (2,366.2 acres) in the portion of the WSA that would be designated wilderness (refer to Map 1 and Appendix 3 in Volume I). The figures and acreages given for this alternative are for Federal lands only. There would be no private land within the wilderness area described in this alternative.

KING TOP WSA

R. 16 W. R. 15 W. R. 14 W.

T. 20 S.

T. 21 S.

T. 22 S.

T. 23 S.

Map 3
PARTIAL WILDERNESS ALTERNATIVE
King Top WSA
UT-050-070

Legend

WSA Boundary

Partial Wilderness Alternative (53,044 acres)

N

SCALE IN MILES
0 1 2

SCALE IN KILOMETERS
0 1 2 3

ELEVATION EXPRESSED IN METERS

KING TOP WSA

• Management Conditions and Constraints

The 53,044-acre wilderness would be withdrawn from mineral entry and closed to new mineral leasing and sale. In the 53,044-acre area development work, extraction, and patenting would be allowed to continue on approximately 20 acres of 10 existing mining claims in this area. A portion of one post-FLPMA oil and gas lease covering 680 acres of the designated area would be phased out upon expiration unless a find of oil or gas in commercial quantities is shown. The 31,726-acre area not designated wilderness would be open to future mineral location, leasing, and sale. Development work, extraction, and patenting of 33 existing mining claims (approximately 660 acres) and future mining claims could occur in the 31,726-acre area if claims are valid. The area not designated would be managed as oil and gas leasing Category 1 on about 31,426 acres and Category 3 on about 300 acres. Part of one existing post-FLPMA lease (approximately 120 acres) and future leases in this area could be developed without concern for wilderness values. Although minerals would be managed as described above, mineral exploration or development are not expected in the foreseeable future in either the designated or nondesignated area because the level of known resources and the probability of development are too low to support a development assumption (see Appendix 6 in Volume I).

Domestic livestock grazing would continue in the 53,044-acre wilderness area. The estimated 3,682 AUMs in the 53,044-acre area would remain available to livestock as presently allotted. Use of 6 miles of ways would be allowed on a limited basis by permit for livestock management activities. In the 31,726-acre nonwilderness area, grazing use of an estimated 3,238 AUMs would continue as authorized in the RMP. The 3 miles of fence and corral could be used and maintained. Use of vehicles for livestock management would not be restricted. About 35 wild horses would be allowed to remain within the WSA. Their use would occur in both the designated and nondesignated portions of the WSA.

Three of the nine proposed guzzlers would be in the wilderness area and would be designed and installed compatible with wilderness protection guidelines. In the remaining 31,726-acre area, six guzzlers would be allowed without concern for wilderness values. New roads would not be required for any of the guzzlers.

The high country that would comprise the 53,044-acre wilderness would be closed to ORV use. About 6 miles of existing ways would not be available for vehicular use except in situations described under the All Wilderness Alternative. The remainder of the unit, including the existing highway and gravel roads or jeep trails that border the WSA (including the road near Politician Point that would be cherry-stemmed), would remain open to vehicular travel. The cherry-stemmed 8 miles of road to a State section would be allowed to remain open to vehicular traffic. About 24 miles of existing vehicular ways would be in the nondesignated portion of the unit and would remain open to vehicular access.

Harvest of forest products in the 53,044-acre wilderness area would not be allowed except for harvest of pine nuts or noncommercial gathering of dead-and-down wood, if accomplished by other than mechanical means. The remaining 31,726 acres would be open to woodland harvest. Because of low demand, steep terrain and lack of access in portions of the WSA, and distance to market areas, only limited noncommercial harvest is expected.

Visual resources on the area designated as wilderness would be managed in accordance with VRM Class I standards, which generally allow for only natural ecological change. The remaining 31,726-acres would be managed under VRM Class IV.

• Action Scenario

About 1 acre of surface disturbance is projected for the designated area and 4 acres for the nondesignated portion of the WSA due to construction of water guzzlers for wildlife. No mineral exploration or development on existing claims or leases is projected. New mining claim location and mineral leasing would be precluded. Therefore, no mineral resource exploration or development would occur. No other rangeland, wildlife habitat or watershed improvement projects are planned following wilderness designation.

No disturbance from ORV use is projected due to management and terrain constraints and because this is not an ORV destination area.

Recreation use is projected to increase over the current estimated use of 300 annual visitor days at a rate of 2 to 7 percent per year. The ratio of vehicular to nonvehicular use would be similar to the No Action/No Wilderness Alternative. Vehicles would continue to use 24 miles of existing ways in the nondesignated area.

Summary of Environmental Consequences

Table 1 summarizes the environmental consequences of the alternatives analyzed in detail.

AFFECTED ENVIRONMENT

This section describes the overall environmental setting. This information allows for independent assessment by the public (as required by the CEQ guidelines) and provides a data base for the cumulative Statewide analysis found in Volume I, as well as the Environmental Consequences of Alternatives section in this WSA analysis.

Unless otherwise indicated, information for this section was taken from BLM staff specialists, technical reports, and file documents.

Wilderness Values

- Size

This WSA contains approximately 84,770 acres of public land. It is the largest WSA in the West Desert. The WSA is approximately 17 miles wide (east to west) by 19 miles long at its widest and longest points.

- Naturalness

Evidences of man include approximately 30 miles of ways that penetrate the WSA from boundary roads. These are judged to be substantially unnoticeable. A road, approximately 8 miles long within the WSA, was constructed in July of 1980 to provide access to State T. 21 S., R. 15 W., sec. 16. Five miles of road and 26 drill sites were permitted in May of 1981 for uranium exploration on pre-FLPMA claims in T. 23 S., R. 14 W., sec. 5. These are post-FLPMA roads not considered in assessing the naturalness of the WSA. The disturbed areas (approximately 20 acres) are being rehabilitated to a substantially unnoticeable condition. Another road that connects U.S. Highway 6/50 with a microwave station in the northern portion of the WSA was excluded from the WSA (cherry-stemmed) during the BLM Intensive Wilderness Inventory. Overall, the WSA meets the naturalness criteria of the Wilderness Act.

- Solitude

The opportunities for finding solitude away from the sights and sounds of others meet the standards of the Wilderness Act in 59 percent or about 50,000 acres of the WSA. However, approximately 41 percent (34,770 acres) is relatively flat and vegetated only with low-growing plants. In this portion the opportunities for finding solitude are not outstanding. The portions offering outstanding solitude are generally the more mountainous and heavily vegetated central areas of the WSA.

The King Top WSA is within the South Range of the USAF's Utah Test and Training Range. The South Range runs approximately north to south from the southern boundary of the Bonneville Salt Flats to the San Francisco Mountains, and east to west from the Sheeprock Mountains to 17 miles within Nevada. This is one of the nation's busiest military air spaces. There are 15,000 aircraft, including all types of tactical fighters and bombers, in the area. There are 100 to 150 aircraft flying over the area per day 6 days per week (conservative estimate). Flights occur as low as 100 feet above the ground surface. Speeds are subsonic except in the very northern portion of the test range in the area around Ibapah, where supersonic speeds are also reached. Heaviest use areas are in the northern part of the test range (Davies, 1985). The King Top WSA is in the southern portion of the range and is less affected by air traffic. However, aircraft occasionally fly directly over the WSA and these overflights can be a source of annoyance to visitors seeking solitude. Military overflights present occasional off-site intrusions (sight and sound) that detract from, but generally do not eliminate, the overall opportunities for solitude in the WSA.

- Primitive and Unconfined Recreation

Primitive recreational activities available include hiking/backpacking, horseback riding, hunting, wildlife observation, and fossil collecting. The lack of water generally diminishes the quality of some of these activities. The overall quality of the recreational activities present is less than outstanding. An exception is fossil collecting at Fossil Mountain, where about 1,920 acres have been identified as an outstanding fossil-collecting area. This is one of the world's

KING TOP WSA

Table 1
Summary of Environmental Consequences

Resource	Alternatives No Action/No Wilderness (Proposed Action)	All Wilderness (84,770 Acres)	Partial Wilderness (53,044 Acres)
Impacts on Wilderness Values	Wilderness values would not be protected by wilderness designation. In the foreseeable future, naturalness and opportunities for solitude and primitive recreation would be slightly reduced in quality on 5 acres of the WSA due to development of guzzlers from which animal special features would benefit. Vehicular use of 30 miles of ways would detract from opportunities for solitude and primitive recreation. Special features would not be significantly affected.	Wilderness values would be preserved. In the foreseeable future, naturalness and opportunities for solitude and primitive recreation would be slightly reduced in quality on 5 acres of the WSA due to development of guzzlers from which animal special features would benefit. Closing all ways to vehicular use would enhance opportunities for solitude and primitive recreation.	Wilderness values would be preserved in the designated area which is about 63 percent of the WSA. In the foreseeable future, naturalness and opportunities for solitude and primitive recreation would be slightly reduced in quality on 5 acres of the WSA due to development of guzzlers from which animal special features would benefit. Special features would be preserved. Continued vehicular use of 24 miles of ways in the nondesignated area would detract from opportunities for solitude and primitive recreation.
Impacts on Livestock Management	Livestock graziing would not be adversely affected because management and access would continue as at present.	Wilderness designation would result in restrictions on access and inconvenience to livestock permittees. Management costs and sheep losses to predators would increase.	Access for livestock management would not be significantly affected because only 6 of the 30 miles of ways in the WSA would be in the designated area. Sheep losses to predators would increase slightly.
Impacts on Recreation	Overall, recreational use would increase. The quality of primitive recreation would be reduced as vehicular use of 30 miles of ways increases.	Primitive recreational use would be preserved and would increase. Vehicle-oriented recreation would be eliminated, but the area is not an ORV destination.	Overall, recreational use would increase. The quality of primitive recreation would be reduced in the benchlands of the WSA as vehicular use of 24 miles of ways increases in the nondesignated area.

most important collection areas for lower Ordovician fossils.

- Special Features

The special features identified in the WSA during the BLM Intensive Wilderness Inventory include the wild horse herds and Fossil Mountain, where some of the best examples of lower Ordovician fossils are found. It is often visited by university groups and amateur collectors, and is of scientific and educational value.

The WSA has resource values that, although not identified as such during the wilderness inventory, could be considered special features. There are two animal species (bald eagle and peregrine falcon) listed as endangered. There are six other special status animal species and three special status plant species found in the WSA. Refer to the Vegetation and Wildlife Including Special Status Species sections for more information.

- Diversity

The WSA is in the Intermountain Sagebrush Province Ecoregion, and has the PNV types of juniper-pinyon, spruce, fir, and Douglas fir. Refer to the Vegetation Including Special Status Species section for more information. To see how the ecoregion and PNV types represented by this WSA compare Statewide and nationally with existing and potential National Wilderness Preservation Units, refer to the Wilderness Values section in Volume I.

This WSA is within a 5-hour drive from three standard metropolitan statistical areas. These are Salt Lake City-Ogden, Utah; Provo-Orem, Utah; and Las Vegas, Nevada.

Air Quality

The King Top WSA is in a PSD Class II area under the provisions of the Clean Air Act as amended. Air quality is generally excellent with unimpaired visibility. The WSA is located in the Great Basin near the center of the area with the highest visual range (over 70 miles) in the United States (EPA, 1979).

Geology and Topography

The King Top WSA is located in the Basin and Range Physiographic Province. The topography of this WSA is typical of Basin and Range relief, with mountain ranges rising sharply above surrounding valleys and trending north-south. Elevations in the WSA range from 5,000 feet to over 8,000 feet.

Exposed bedrock consists chiefly of Devonian carbonate rocks with smaller areas of Ordovician and Silurian carbonate rocks exposed along the periphery of the tract (Hintze, 1980). Oligocene volcanic rocks are exposed in the southern part of the WSA. The Confusion Range is a tilted fault block that originated during the middle and upper Tertiary period. High angle faults and thrust faults are abundant and well exposed (SAI, 1982).

Soils

Soils within the WSA vary from dark-colored, moderately deep loams on the mountains to the shallow, cobbly, light-brown soils of the alluvial fans.

There are no significant erosion problems in the WSA. Table 2 summarizes soil erosion conditions for the entire WSA. Erosion conditions were determined using soil surface factors (refer to the Glossary).

Table 2
Erosion Condition

Classification	Annual Soil Loss (cubic yards/acre)	Acres	Percent of WSA	Total Annual Soil Loss (cubic yards)
Severe	5.4	0	0	0
Critical	2.7	0	0	0
Moderate	1.3	2,000	2.4	2,600
Slight	0.6	82,770	97.6	49,662
Stable	0.3	0	0	0
Total		84,770	100	52,262

Sources: USDI, BLM, 1987b; Leifeste, 1978.

Reclamation potential varies within each soil type and between soil types. Generally the darker, loamy soils have a greater reclamation potential than do the shallow, drier soils found in the shadscale-horsebrush vegetative types.

Vegetation Including Special Status Species

The WSA contains four major vegetation types, as shown in Table 3. The predominant vegetation types are desert shrub and pinyon-juniper woodland. Small areas of Douglas fir are scattered among the pinyon-juniper woodland on the King Top plateau.

No listed threatened or endangered plant species are known to occur in the WSA. One Category I and one

KING TOP WSA

Category 2 candidate plant species Eriogonum amophilium and Cryptantha compacta) are found in the WSA (refer to Appendix 4 in Volume I). There is no riparian vegetation in the WSA.

Table 3
Existing Vegetation Types

Existing Vegetation Type	Acres	Percent of WSA
Pinyon-juniper-wheatgrass	32,212	38
Wheatgrass	8,477	10
Shadscale-horsebrush-cheatgrass	43,233	51
Alkali Playa	848	1
Total	84,770	100

Source: USDI, BLM, 1987b.

The King Top WSA is in the Intermountain Sagebrush Province Ecoregion as shown on the Bailey-Kuchler ecosystems map (USDI, USGS, 1978). The PNV types of the WSA are listed on Table 4.

Table 4
Potential Natural Vegetation Types

PNV Type	Acres	Percent of WSA
Juniper-pinyon woodland	33,908	40
Spruce, fir, Douglas fir	50,862	60
Total	84,770	100

Source: USDI, USGS, 1978.

Water Resources

There are no springs or live water within the WSA, and no known aquifers. A water well, on a State section in the middle of the WSA, was drilled to a depth of 1,700 feet without producing water.

Mineral and Energy Resources

The energy and mineral resource rating summary is given in Table 5. Refer to Appendix 5 in Volume I for a detailed description of the SAI rating system.

The WSA could contain deposits of beryllium, lead, zinc, and tungsten that are currently listed as strategic and critical materials (USDoD, 1988).

Table 5
Mineral and Energy Resource Rating Summary

Resource	Rating: Favorability[a]	Rating: Certainty[b]	Estimated Resource
Oil and Gas	f2	c2	Less than 10 million barrels of oil; less than 60 billion cubic feet of gas
Uranium	f1	c1	Little or none
Geothermal	f2	c1	Low temperature resource
Beryllium	f2	c1	Less than 10 metric tons
Lead/Zinc	f2	c1	Less than 50,000 metric tons
Tungsten	f2	c1	Less than 500 metric tons

Source: SAI, 1982; USDI< BLM 1987d.

[a]Favorability of the WSA's geologic environment for a resource (f1 = lowest favorability or smallest size deposit; f4 = highest favorability or largest size deposit).

[b]The degree of certainty that the resource does or does not exist within the WSA (c1 = lowest and c4 = highest).

- Leasable Minerals

  - Oil and Gas

    Approximately 800 acres of the WSA are under post-FLPMA oil and gas lease with lease application on the remaining acreage.

    Oil and gas categories within the WSA are Category 1 on 82,850 acres and Category 3 on 1,920 acres.

    Industry evaluation indicates there is a high favorability for the occurrence of oil and gas in the WSA. However, several exploratory oil and gas wells have been drilled in the WSA, but no shows of oil or gas were reported. Based on somewhat favorable geologic structure and permeability, the favorability exists for small pools of oil or gas (f2) (less than 10 million barrels of oil or 60 billion cubic feet of gas), with a low (c2) degree of certainty.

  - Geothermal

    The area has slight (f1) potential for a low temperature geothermal resource with a very low (c1) degree of certainty. There is no market for this resource.

- Locatable Minerals

About 43 mining claims are in the WSA and cover an area of approximately 860 acres.

- Beryllium

The geologic favorability is f2 for potential small deposits, with a very low (c1) degree of certainty.

- Lead and Zinc

The carbonate host rocks along with the Tertiary volcanics and block faulting provide a favorable geologic environment for small deposits (f2), with a very low (c1) degree of certainty of occurrence. Associated minerals include gold, silver, and copper in minor amounts.

- Tungsten

Although the genetic source rocks for tungsten deposits are lacking at the surface, they may occur at depth. A very low (c1) degree of certainty is assigned for small (f2) deposits.

- Uranium

There is a very low certainty (c1) that a geologic favorability exists for uranium resources within the WSA (f1).

- Salable Minerals

Salable minerals (sand, gravel, limestone, etc.) are present in the WSA, but there is no interest due to the abundance of other more easily accessible sources.

Wildlife Including Special Status Species

There are approximately 50 species of mammals, 106 species of birds, 14 species of reptiles, and one amphibian species that could inhabit the WSA at different times of the year. Although a great diversity exists, no one species could be described as abundant. All of the WSA is considered deer habitat, 8,245 acres are antelope habitat, and 3,155 acres are chukar habitat. The WSA currently supports about 20 deer during the winter and 20 antelope on a yearly basis. Portions of the WSA, mainly in the benchlands on the northwest side, are high priority areas for development of water improvement for antelope habitat.

Approximately 65,200 acres in the WSA are managed under the West Desert HMP (USDI, BLM, 1980c). This plan calls for the future construction of nine wildlife guzzlers within the WSA boundary. One wildlife guzzler already exists within the WSA. There are no existing or proposed vegetation manipulation projects nor is there potential for vegetation manipulation in the WSA.

There are several wildlife vegetation study sites within the WSA. Access to these is by vehicular use of existing ways.

Two endangered species (bald eagle and peregrine falcon) and the golden eagle (a BLM sensitive species) are found in the WSA. Other special status species that could occur in the WSA are five Category 2 candidate species. These are the ferruginous hawk, long-billed curlew, Swainson's hawk, western snowy plover, and the white-faced ibis. These species are birds that frequent areas throughout the Great Basin and other parts of the western United States. Refer to Appendix 4 in Volume I for details.

Most of the area inside the WSA is considered crucial yearlong habitat for the golden eagle. This indicates that golden eagles may nest inside the WSA.

Forest Resources

There are approximately 14,760 acres of dense pinyon-juniper woodland in the WSA. Over 9,260 acres of the forested area have slopes in excess of 40 percent and are considered unsuitable for forest product harvest. Additional access roads would be needed to harvest the forest products on the 5,500 acres considered suitable. Available woodland products are estimated as follows: less than 48,650 cords of firewood, 4,070 fenceposts, and 20,000 lb (annually) of pine nuts. Past utilization of these resources is estimated to be only approximately 50 cords of firewood per year. No commercial harvests have occurred in the WSA.

Livestock and Wild Horses/Burros

Within the WSA there are approximately 6,920 AUMs allocated for use by nine permittees on portions of five sheep and two cattle allotments (refer to Table 6). Existing range improvements consist of 3 miles of fenceline and one corral. There are approximately 30 miles of existing ways that extend into the WSA from border roads that are used by permittees and BLM in supervision of livestock operations and maintenance

KING TOP WSA

Table 6
Livestock Grazing Use Data

Allotments	Total Acres	Acres in WSA	Total AUMs	Number of AUMs in WSA	Number and Kind of Livestock	Season of Use	Number of Operators
King	47,000	16,570	2,927	1,229	2,439 Sheep	11/01-04/10	1
Blackham Canyon	31,820	18,995	2,163	1,467	1,802 Sheep	11/01-04/30	1
Blind Valley	39,940	16,135	2,100	1,242	1,750 Sheep	11/01-04/30	2
Painted Potholes	38,432	7,825	1,686	442	1,404 Sheep	11/01-04/30	1
Conger Spring	70,425	3,095	4,542	182	4,094 Sheep	11/01-04/30	1
Boob Canyon	29,545	10,300	2,597	920	371 Cattle	11/01-05/31	1
Brecks Knoll	69,393	11,850	5,752	1,438	877 Cattle	11/01-05/15	2
Total	326,555	74,770	21,767	6,920			9

Sources: USDI, BLM, 1987b

of existing studies. The use of the area is dependent on the permittees hauling water and obtaining access for sheep camps. There are four sheep camp locations in the WSA; one in King Allotment, one in Painted Potholes, and two in the Blind Valley Allotment. Water is hauled along boundary roads to locations in the Brecks Knoll Allotment. No potential exists for increasing AUMs by mechanical treatment of existing vegetation within the WSA.

APHIS conducts predator control in BLM grazing allotments that comprise the King Top WSA. A total of 82 coyotes were taken in the allotments in and surrounding the WSA during the 1986 to 1987 period (USDA, APHIS 1988). Thirty-nine were taken from aircraft, 27 by cyanide guns (M-44s), one by calling, and 15 by steel trap.

The WSA comprises between 4 and 68 percent of the area of any one allotment. It is not known what proportion of the predators were actually taken within the WSA. The combined, confirmed livestock losses for 1986 to 1987 in these allotments were 43 sheep. An unrecorded number of additional losses were reported by livestock operators.

There are presently approximately 45 wild horses using the WSA. Most of this use occurs in the south-central portion. Management plans call for maintaining a herd of approximately 35 animals. Excess numbers will be trapped and removed from this general area. Trapping facilities would be located outside the WSA. Existing vehicular ways are used for access to observe and manage the horse herd.

Visual Resources

Much of the west and north slopes of the King Top Mountain are comprised of sheer tan and gray cliffs. Above the cliffs is the King Top plateau. Covered with dark-green patches of pinyon-juniper and Douglas fir, the plateau comprises the largest portion of the WSA. The east and west slopes of the WSA consist of light-tan rolling hills dotted with juniper trees and low tan shrubs. Some 63 percent (53,044 acres) of the range contains moderately high (Class B) scenic values due primarily to naturalness, variety in color, and shape of landform. The remaining 37 percent (31,726 acres) of the WSA has low (Class C) scenic values due to the low rolling foothills, flat valley bottoms with limited vegetation, and color variations. The WSA is managed as VRM Class III on 1,160 acres and Class IV on 83,610 acres. (Appendix 7 in Volume I explains the BLM VRM rating system.)

Cultural Resources

Little archaeological survey work has been completed in the WSA. According to BLM cultural resource site maps (USDI, BLM, 1988) three sites have been recorded, and these were discovered in connection with other activities (i.e., MX and oil/gas exploration).

The three sites are two small lithic sites and one small rock shelter. These sites are not listed or potentially eligible for listing on the National Register of Historic Places. The potential for the existence of additional sites is relatively high because the entire West Desert area was used by wandering groups of Archaic, Fremont, and Paiute-Shoshone people for several thousand years.

Historically, the only significant use of the area was the mining activity in the Barn Hills to the east and the village of Ibex adjacent to but outside of the east boundary of the WSA.

Recreation

Present recreational use in the WSA is estimated to be approximately 300 visitor days annually for all activities. The most popular recreational activities include fossil collecting, deer and chukar hunting, geological, botanical and zoological sightseeing (wild horses), and hiking associated with these activities. Vehicular use is usually associated with other recreational uses such as hunting, and the 30 miles of existing ways are used for access. Overall, approximately 189 visitor days annually can be attributed to primitive recreation and 111 to activities based on vehicle access into the WSA.

Fifteen recreational opportunities were evaluated for their quality in the WSA. Fourteen opportunities were present in varying degrees. Only one activity, fossil collecting, was rated excellent in quality. (This rating applies only to the Fossil Mountain area, which comprises about 2 percent of the WSA.) Three activities (backpacking, dayhiking, and geological sightseeing) are average in quality because the large size of the WSA, numerous canyons, and geologic features contribute to an otherwise less than average opportunities. The remaining activities are lower than average or poor in quality due to lack of water, poor access, and lack of destination points.

Land Use Plans

The WSA is BLM-administered public land except for 11 State sections (6,660.7 acres). There are no private or split-estate lands in the WSA. The current policy of the State is to maximize economic returns from State lands and to reserve its position regarding exchange of in-held lands (see Chapter 1 in Volume I). In 1986, the Utah State Legislature passed S.C.R. No. 1 opposing any additional wilderness designation in Utah and urging that State lands not be exchanged out of wilderness areas. All of the in-held State lands are under grazing permit and one section (640 acres) is leased for metals. Grazing is the only current activity on these lands.

The Millard County Master Plan (Paul Nelsen Associates, Inc., 1981) does not specifically address wilderness. The county believes that Federal lands in the county should be generally utilized to their greatest economic potential under a multiple-use concept.

The Millard County Commission has endorsed the Consolidated Local Government Response to Wilderness (Utah Counties, 1986) that opposes wilderness designation of BLM lands in Utah.

The current BLM planning document for the King Top WSA is the Warm Springs RMP (USDI, BLM, 1987b). Wilderness is not addressed in the Warm Springs RMP. Wilderness designation is part of the BLM multiple-use concept. The BLM land use plan is linked to the Statewide Wilderness EIS through inclusion of the present plan as the No Action/No Wilderness Alternative.

The King Top WSA is in the South Range of the USAF Utah Test and Training Range. The USAF position is that low-level military overflights of the Utah Test and Training Range, including the WSA, would continue with or without wilderness designation (USAF, 1986).

Socioeconomics

- Demographics

The King Top WSA is located in southwestern Millard County approximately 50 road miles southwest of Delta, Utah.

From 1970 to 1980, the population of Millard County grew by approximately 28.4 percent to 9,050. A major portion of the Millard County population lives in Delta and Fillmore. Table 7 presents baseline and projected population data for Millard County. It is estimated that between 1980 and 1987 population increased to about 10,415. Population projections for the county indicate that the number of people living in Millard County in the year 2010 will be about 12,900 for about a 43 percent increase over 1980 levels (Utah Office of Planning and Budget, 1987).

Table 7
Baseline and Projected Population and Employment Growth
Millard County

	1980	1990	2000	2010
Population	9,050	11,000	11,600	12,900
Employment	3,645	5,500	6,000	6,700

Source: Utah Office of Planning and Budget, 1987.

- Employment

Table 7 shows the baseline and projected total employment for the county to the year 2010. The government sector (Federal, State, and local) is the most important in terms of employment in the Millard County economy. Farm employment makes up about 26 percent of the total employment in the county. The Intermountain Power Project contributes significantly to employment, while mining has been declining in recent years.

Millard County is part of the Central MCD. Table 8 shows the baseline (1980) and projected employment by source for the MCD to the year 2010. In 1980 the leading employment sectors for the MCD were government (21 percent), agriculture (20 percent) and trade (14 percent). Mining provided approximately 4 percent of the direct employment in the MCD. It is projected that by the year 2010 employment in the MCD will increase by approximately 58 percent. Trade will increase to 17 percent and services to 12 percent of the total. Government will decline to 17 percent, agriculture to 11 percent, and mining to 3 percent of the total.

Table 8
Central Multi-County District
Employment[a]

	1980	1990	2000	2010
Agriculture	3,649	3,500	3,600	3,800
Mining	706	700	800	900
Construction	822	1,400	1,800	2,200
Manufacturing	2,047	1,900	2,200	2,600
Transportation, Utilities	589	1,300	1,400	1,500
Trade	2,604	3,400	4,000	4,900
Finance, Insurance, Real Estate	347	400	500	600
Services	1,439	2,300	2,900	3,500
Government	3,919	4,100	4,100	4,900
Nonfarm Proprietors	2,278	2,800	3,300	4,100
Totals	18,400	21,800	24,600	29,000

Source: Utah Office of Planning and Budget, 1987.

[a]Includes Juab, Millard, Piute, Sanpete, Sevier, and Wayne Counties.

- Sales and Revenues

Economic-related activities in the WSA include mineral exploration, livestock production, woodland production, and recreation. Table 9 summarizes local sales and Federal revenues from the WSA. Appendix 9 in Volume I identifies the multipliers used to estimate sales and revenues.

Table 9
Sales and Revenues

Source	Estimated Annual Local Sales[a]	Estimated Annual Federal Revenues
Oil and Gas Leases	None	$ 1,600
Mining Claim Assessment	$ 4,300	None
Livestock Grazing	$138,400	$10,656
Woodland Products	$3,750[b]	$250
Recreational Use	$ 1,230	None
Total	$147,680	$12,506

Sources: BLM File Data; Appendix 9 in Volume I.

[a]Local sales represent money potentially spent. They do not account for the total income that would be generated by these expenditures.

[b]This is the value of the forest products to those who harvest them and may not be directly related to local sales.

The WSA has 43 mining claims. Regulations require a $100 annual expenditure per claim for labor and improvements, an undetermined part of which is spent in the local economy. Not all of the claims are current in assessment.

No oil and gas or mineral production has occurred in the WSA. Therefore, mineral and energy resource production from the WSA has not contributed to local employment or income.

Nine livestock operators have a total grazing privilege of 6,920 AUMs within the WSA. If all this forage were utilized, it would account for $138,400 of livestock sales and $34,600 of ranchers' returns to labor and investment.

It is estimated that about 50 cords of firewood have been harvested annually from the WSA for private use. The sales value of the wood is about $3,750. The harvests are small and are insignificant to the local economy and only of minor significance to those involved in the harvest.

The WSA's recreational use and related local expenditures are low and are insignificant to both the local economy and individual businesses. The actual amount

of income generated locally from recreational use in the WSA is unknown. However, an approximate range of expenditures can be deduced from Dalton (1982). This study indicates that the Statewide average local expenditures per recreational visitor day for all types of recreation in Utah are approximately $4.10. The recreational use for the King Top WSA is estimated as about 300 visitor days per year for a total contribution of $1,230 annually to the local economy of Millard County.

The WSA generates Federal revenues from mineral leases and livestock sources (refer to Table 9).

One oil and gas lease in the WSA covers approximately 800 acres. At $2 per acre, lease rental fees generate up to $1,600 of Federal revenues annually. Half of these monies are allocated to the State, which then reallocates these revenues to various funds, the majority of which are related to energy development and mitigation of local impacts of energy and mineral development.

Average actual livestock use and, therefore, Federal revenues generated from grazing in the WSA are unknown; however, the permittees in the WSA can use up to 6,920 AUMs per year. Based on a $1.54 per AUM grazing fee, the WSA can potentially generate $10,656 of grazing fee revenues annually, 50 percent of which would be allocated back to the local BLM District for the construction of rangeland improvements.

No commercial permits for recreation have been issued for the WSA; therefore, no Federal revenue is generated from these resources.

ENVIRONMENTAL CONSEQUENCES OF ALTERNATIVES

This section describes the environmental consequences of implementing the alternatives. The analysis is based on the BLM management actions and anticipated activities presented in the Introduction to Volume II and the Description of the Alternatives for the King Top WSA.

No Action/No Wilderness Alternative (Proposed Action)

- Impacts on Wilderness Values

Because the WSA would not be designated wilderness with this alternative, the identified wilderness values would not receive the protection afforded by application of the Wilderness Management Policy (BLM Manual 8560). Special values related to fossil collecting at Fossil Mountain would, however, be protected by continued management of the area as leasing Category 3.

Disturbance of approximately 5 acres for development of wildlife guzzlers is likely in the foreseeable future and would result in a slight reduction in the quality of naturalness and opportunities for solitude and primitive recreation in the disturbed areas. The disturbance would not be substantially noticeable in the area as a whole and would not reduce the overall wilderness quality of the WSA because disturbance would be minor (involving only 0.006 percent of the WSA) and spread among several locations. Fossil and plant special features would not be affected because the guzzlers would not be located at Fossil Mountain, and they would be located so as to avoid special status plant species. Animal special features would benefit from the additional water sources.

Sights and sounds from continued and increased vehicle use of 30 miles of way would detract from opportunities for solitude and primitive recreation during the period of use. King Top is not an ORV destination area and additional ORV disturbance which would affect wilderness values is not anticipated. Most of the areas where ways exist or could be developed are generally not considered by BLM to have outstanding opportunities for solitude and primitive recreation.

Overflights by military aircraft would continue to be an occasional annoyance that would detract from the opportunities for solitude in the WSA.

The extent that disturbance would occur over the long term and, therefore, the long-term loss of wilderness values that would occur is not accurately known. Loss would occur as intrusions increase.

Conclusion: Wilderness values would not be protected by wilderness designation. In the foreseeable future, naturalness and opportunities for solitude and primitive recreation would be slightly reduced in quality on 5 acres of the WSA. Special features would not be adversely affected.

- Impacts on Livestock Management

Present livestock use of an estimated 6,920 AUMs and maintenance of the existing well and fence could

continue. No additional range improvements are planned. Existing roads and 30 miles of ways could continue to be used to manage livestock and to establish and supply the four sheep camps and haul water in the WSA.

Predator control would continue under State law and APHIS regulations. Therefore, few, if any, changes in livestock management including predator control are expected.

Conclusion: The No Action/No Wilderness Alternative would not adversely affect livestock management in the WSA.

- Impacts on Recreation

Thirty miles of vehicular ways would be available for recreational access. Recreational use of the 1,920-acre Fossil Mountain HS/ACEC would be protected from disturbance related to oil and gas and geothermal exploration and development because the area would be managed for leasing Category 3, no surface occupancy. No other mineral exploration or development is expected in the foreseeable future; therefore, recreational use would not be affected by mineral-related activities.

The future trends in recreational use of the WSA are unknown. However, based on a review of several projections (UDNRE, ORA, 1980; UDNRE, DPR, 1985; Utah Office of Planning and Budget, 1984; Jungst, 1978; Hof and Kaiser, 1981; and Cordell and Hendee, 1982) it is estimated that outdoor recreation in Utah will increase at between 2 and 7 percent per year over the foreseeable future. At this rate overall recreational use is expected to increase from 300 current visitor days per year to between 560 and 2,600 visitor days by the year 2020. Approximately 37 percent of recreational use in the WSA is based on vehicle access on the 30 miles of ways and 63 percent is primitive recreation. Assuming proportionate increases, vehicle-based recreation would increase to between 207 and 967 visitor days per year while primitive recreation use would increase to between 353 and 1,633 visitor days per year.

Because of the large size and steep terrain of the WSA, overall primitive recreation use would not decline as vehicle use increases. The quality of the primitive recreational experience would, however, be occasionally reduced by vehicle noise and activity, mainly in the benchlands of the WSA where 24 of the 30 miles of ways are located.

Conclusion: Overall, except for a gradual increase in use, there would be little change in recreational opportunities. The quality of primitive recreation would be reduced.

All Wilderness Alternative

- Impacts on Wilderness Values

Designation and management of all 84,770 acres as wilderness would preserve the wilderness values in the WSA. The potential for surface disturbance would be reduced through closure of the entire area to future mineral leasing and location and to ORV use, and through management of the area as VRM Class I which allows for only natural ecological change. Naturalness would be protected on all 84,770 acres. Solitude would be protected on approximately 50,000 acres that meet and 34,770 acres that do not meet standards for outstanding opportunities. Primitive and unconfined recreation would be protected on 1,920 acres that meet and 82,850 acres that do not meet the standards for outstanding opportunities. All special features, including special status plant and animal species and fossils, would be protected.

Even with wilderness designation, disturbance of approximately 5 acres for development of wildlife guzzlers is likely in the foreseeable future and would result in a slight reduction in the quality of the wilderness values of naturalness and opportunities for solitude and primitive recreation in the disturbed areas. The loss would not be substantially noticeable in the area as a whole and would not reduce the overall wilderness quality of the WSA because disturbance would be minor (involving about 0.006 percent of the WSA) and spread among several locations. Fossil and plant special features would not be affected because the guzzlers would not be located at Fossil Mountain, and they would be located so as to avoid special status plant species. Special status animal species would benefit from the additional water sources.

Vehicular use of 30 miles of ways would cease and no longer detract from opportunities for solitude and primitive recreation.

Overflights by military aircraft would continue to be an occasional annoyance that would detract from the opportunities for solitude in the WSA.

Conclusion: Wilderness values would be preserved. In the foreseeable future, naturalness and opportunities for solitude and primitive recreation would be

slightly reduced in quality on 5 acres of the WSA but animal special features would benefit.

• Impacts on Livestock Management

Present domestic livestock grazing would continue as authorized in accordance with the Warm Springs RMP. The 6,920 AUMs currently allocated in the WSA are controlled by nine livestock permittees. Vehicles are used frequently during the grazing season to manage livestock and supply the four sheep camps in the WSA. Some limitations on vehicular use may occur and sheep camps may not have ready access. This could be inconvenient for permittees and result in increased costs of management.

Because of the lack of springs and perennial streams, water hauling is a necessary activity connected with grazing in the WSA. Restrictions on access for this activity would seriously affect livestock operators in the management of allotments in the WSA.

Predator control would be restricted to approved methods, and slight increases in sheep losses to predators on public, private, and State lands within and near the WSA would result. Increases in sheep losses would probably be slight because several methods of predator control could still be utilized.

Conclusion: Restrictions on access and predator control would be an inconvenience to livestock permittees and would result in slight increases in predation on sheep. Management costs and sheep losses to predators would increase.

• Impacts on Recreation

Primitive recreational use of the WSA is estimated to increase about 2 to 7 percent per year over the foreseeable future in relation to population increases and current trends of recreational use. Commercial operations based on primitive recreational activities could apply for use of the WSA.

Closure of 30 miles of way to motor vehicles would eliminate vehicular-based recreation in the WSA. The Fossil Mountain HS/ACEC would be protected from surface disturbance. Closure of access would have no effect on fossil collecting at Fossil Mountain because the mountain is close to the WSA boundary and is not currently accessible by vehicles.

Because vehicular use would be eliminated, overall recreation use would initially decline. This is not an ORV destination area and the loss of ORV opportunity would not be significant regionally.

Conclusion: Primitive recreation use would be preserved. Vehicle-based recreation would be eliminated from the WSA. Initially, there would be a decline in overall use.

Partial Wilderness Alternative (53,044 Acres)

The major activities that would occur in the designated portion of the WSA for this alternative are the same as described for the All Wilderness Alternative. For the nondesignated portion, management would be as described for the No Action/No Wilderness Alternative. The specific actions that would take place within the 53,044-acre area designated as wilderness and the 31,726-acre nondesignated area are discussed in the Description of the Alternatives section.

• Impacts on Wilderness Values

Wilderness designation of 53,044 acres would preserve the area's best wilderness values. In the designated area, the potential for surface-disturbing activities that could impair wilderness values would be reduced through management under VRM Class I (which generally allows for only natural ecological change), through the ORV closure, and through closure of the area to future mineral leasing and location. Naturalness (53,044 acres meet the standard), outstanding opportunities for solitude (about 46,000 acres meet the standard), outstanding opportunities for primitive recreation (about 1,500 acres meet the standard), and most special features including the wild horse herd, Fossil Mountain, and endangered or sensitive plants or animals would be preserved.

Disturbance of approximately 4 acres in the nondesignated area and 1 acre in the designated area for development of wildlife guzzlers is likely in the foreseeable future and would result in a slight reduction in naturalness and opportunities for solitude and primitive recreation. The loss would not be substantially noticeable in the area as a whole and would not reduce the overall wilderness quality of the WSA because disturbance would be minor (involving 0.006 percent of the WSA) and spread among several locations. Fossil and plant special features would not be affected because the guzzlers would not be located at Fossil Mountain, and they would be located so as to avoid special status plant species. Special status animal species would benefit from the additional water sources.

Although recreational use would increase at a rate of 2 to 7 percent annually, use relative to the size of the area would be low, and no significant effect on solitude and primitive recreation values would be expected. Sights and sounds from continued and increased vehicle use of 24 miles of ways in the nondesignated area would detract from opportunities for solitude and primitive recreation during the period of use. King Top is not an ORV destination area and little additional ORV disturbance which would affect wilderness values is anticipated.

Conclusion: Wilderness values would be preserved in the designated area which is about 63 percent of the WSA. In the foreseeable future, naturalness and opportunities for solitude and primitive recreation would be slightly reduced in quality on 5 acres of the WSA.

- Impacts on Livestock Management

The negative effect on domestic livestock grazing from designation of this WSA as wilderness would be lessened under this alternative. Of the 6,920 AUMs allocated within the WSA, approximately 3,682 AUMs would be within the designated portion of the WSA and 3,238 AUMs within the nondesignated portion. None of the existing developments are in this portion of the WSA, so they could be maintained without consideration of wilderness values. Of the approximately 30 miles of existing vehicular ways, only about 6 miles are within the area that would be designated. This would greatly reduce inconvenience to permittees who presently use the ways for hauling water and salt to manage sheep camps. All of the four sheep camps would be outside of the designated area and could be accessed without restrictions.

Predator control would be restricted to approved methods on 62 percent of the WSA, and slight increases in sheep losses to predators on public, private, and State lands within and near the WSA would result. Increases in sheep losses would probably be slight because several methods of predator control could still be utilized.

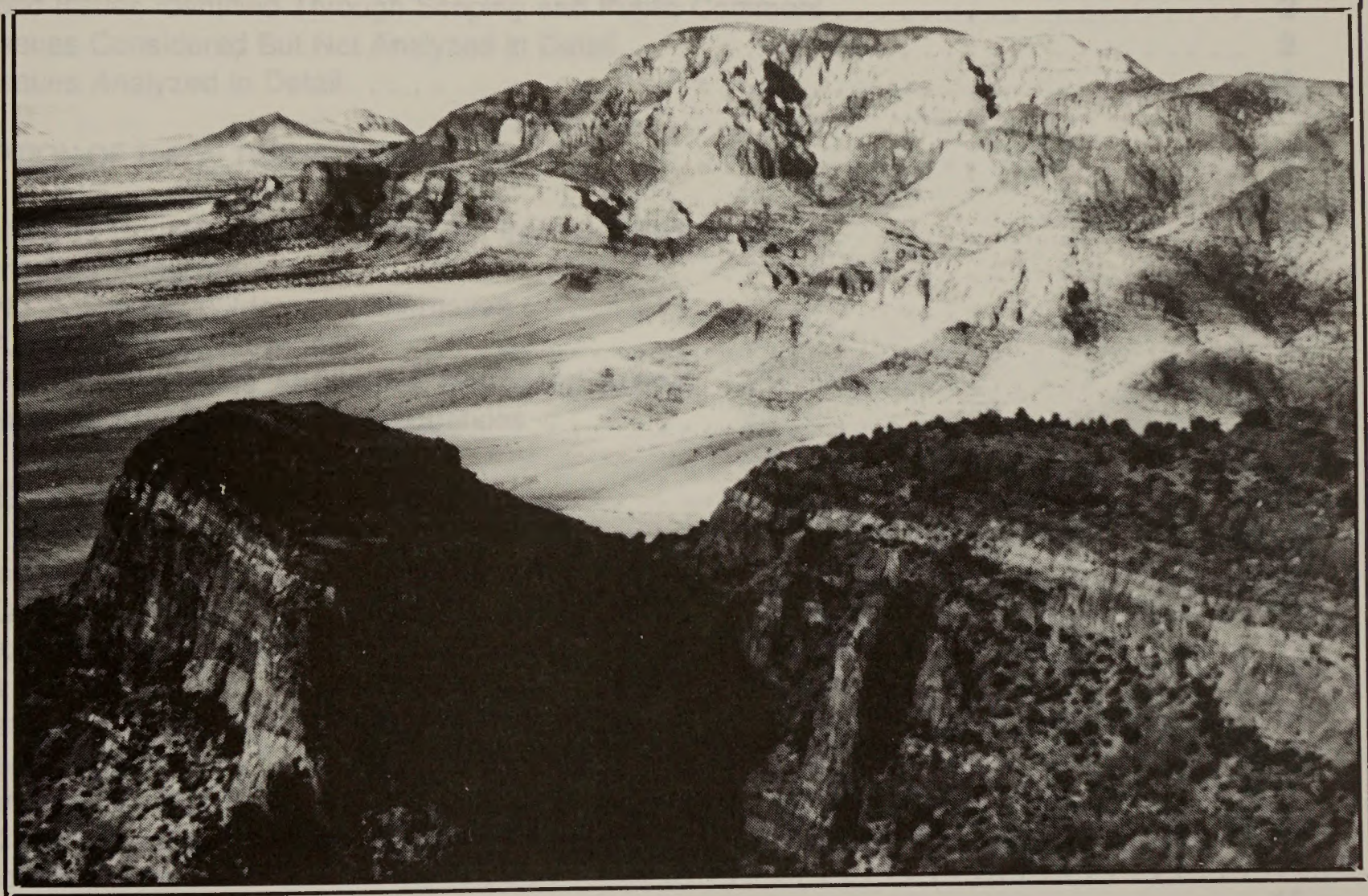
Conclusion: Access for livestock management would not be significantly affected. Sheep losses to predators would increase slightly.

- Impacts on Recreation

Impacts on recreational values and opportunities for the 53,044-acre area that would be designated wilderness would be basically as described in the No Action/No Wilderness Alternative. Of the 30 miles of existing ways, about 24 miles are in the area that would not be designated. This would allow for vehicular access into the King Top WSA for activities such as hunting, although it would also reduce the quality of the area's opportunities for primitive recreation.

Conclusion: Overall, except for a gradual increase in use, there would be little change in recreational opportunities. The quality of primitive recreation would be reduced.

Wah Wah Mountains WSA



WAH WAH MOUNTAINS WSA

TABLE OF CONTENTS

INTRODUCTION 1

General Description of the Area 1
Changes for the Final EIS 1
Specific Issues Identified Through Scoping and Public Comment 2
Issues Considered But Not Analyzed in Detail 2
Issues Analyzed in Detail 3

DESCRIPTION OF THE ALTERNATIVES 3

Alternatives Considered and Eliminated from Detailed Study 3
Alternatives Analyzed 3
No Action/No Wilderness Alternative 3
All Wilderness Alternative 5
Partial Wilderness Alternative (Proposed Action) 7
Summary of Environmental Consequences 9

AFFECTED ENVIRONMENT 11

Wilderness Values 11
Air Quality 12
Geology and Topography 12
Soils 12
Vegetation Including Special Status Species 13
Water Resources 13
Mineral and Energy Resources 13
Wildlife Including Special Status Species 14
Forest Resources 14
Livestock and Wild Horses/Burros 15
Visual Resources 15
Cultural Resources 16
Recreation 16
Land Use Plans 16
Socioeconomics 17

ENVIRONMENTAL CONSEQUENCES OF ALTERNATIVES 19

No Action/No Wilderness Alternative 19
All Wilderness Alternative 19
Partial Wilderness Alternative (Proposed Action) 20

TABLE OF CONTENTS

MAH MAH MOUNTAINS WSA

WAH WAH MOUNTAINS WSA

(UT-050-073 AND UT-040-205)

INTRODUCTION

General Description of the Area

The Wah Wah Mountains WSA is located approximately 20 miles from the Utah-Nevada border in Millard and Beaver Counties. It is approximately 35 miles west of Milford, Utah. The WSA is approximately 42,140 acres in size, with 35,000 acres in Millard County and 7,140 acres in Beaver County. The WSA is 20 miles long and 5 miles wide at its widest point. Elevation ranges from 6,000 feet to over 8,900 feet.

The Wah Wah Mountains are an above-average example of the north-south trending blockfaulted mountain ranges of the Great Basin. Crystal Peak (7,106 feet), a distinctive landform comprised of white volcanic tuff in the northern part of the WSA, is a striking remnant of the Tertiary volcanoes that preceded blockfaulting in the area. The upper elevations of the Wah Wah Mountains are remote and undisturbed. The predominant vegetation is pinyon-juniper woodland. A stand of bristlecone pine is located in the center of the WSA.

Precipitation ranges from 12 inches at the lower elevations to 20 inches on the higher ridges. The temperature extremes range from -27 degrees Fahrenheit (F) in winter to 106 degrees F in the summer.

Changes for the Final EIS

In addition to the changes noted in the Introduction to Volume II, the following changes specific to the WSA have been made since publication of the Draft EIS.

1. Portions of the boundary of the WSA (T. 24 S., R. 15 W., sec. 6; and T. 25 and 26 S., R. 16 W.) have been redrawn to correct the errors in the Draft EIS maps. These changes did not require acreage adjustments because acreage calculations were based on the boundaries as shown in the inventory document and Final EIS. This change resulted in the exclusion of State T. 25 S., R. 16 W., sec. 36.

2. Descriptions of the No Action/No Wilderness and Partial Wilderness Alternatives have been revised to coincide with the Warm Springs RMP, which has replaced the House Range MFP since publication of the Draft EIS. The main feature of the RMP dealing with the WSA is proposed designation of two ACECs (6,450 acres) that would be closed to ORV use, withdrawn from mining claim location, and closed to surface occupancy for leasable minerals. The ACECs would also be closed to timber harvest.

3. The boundary of the Partial Wilderness Alternative has been corrected north and west of Crystal Peak (refer to Map 3) to better reflect BLMs proposed action. Additionally, a way in T. 24 S., R. 15 W., sec. 36 would remain open for vehicle use with the Partial Wilderness Alternative.

4. The anticipated surface disturbance presented in the Draft EIS (196 acres) was based on the assumption that all mineral and other resources potentially within the WSA would be developed sometime in the future without consideration of technical or economic feasibility. In response to public comments relative to the feasibility of developments, the disturbance estimates have been revised to focus on activities projected to be feasible within the foreseeable future (see Appendix 6 in Volume I). This resulted in a reduction of surface disturbance estimates from the 196 acres reported in the Draft EIS to 2 acres of surface disturbance for the Final EIS.

5. The Draft EIS identified development of a proposed water guzzler within the WSA to improve wildlife habitat. The Warm Springs RMP identifies portions of the WSA as high priority water development areas for improvement of antelope habitat. In the Final EIS, it is projected that three guzzlers would be developed, disturbing a total of 2 acres. Additional roads would not be required.

STATEWIDE
POCKET MAP
WSA
NO. 11
SEE VOL.I

WAH WAH MOUNTAINS WSA

Specific Issues Identified Through Scoping and Public Comment

- Issues Considered But Not Analyzed in Detail

In addition to the issues discussed and eliminated from further consideration in the Introduction to Volume II (i.e., impacts on air quality, geology and topography, soils, water rights, and land use plans and policies), the following issues or impacts specific to the Wah Wah Mountains WSA were considered but are not analyzed in detail in the Final EIS for the following reasons.

1. Vegetation Including Special Status Species: Estimates of surface disturbance without wilderness designation have been revised downward from the 196 acres reported in the Draft EIS to no mineral-related surface disturbance in the Final EIS. About 2 acres would be disturbed from the installation of guzzlers. Given this new scenario, the impacts of direct disturbance of vegetation would be reduced and would not be significant with any of the alternatives (less than 0.1 percent of the WSA). There are no threatened, endangered, or proposed threatened or endangered plant species known to occur within the WSA. In any event, BLM would require site-specific clearances of potentially disturbed areas and consult with the FWS concerning impacts on threatened or endangered plant species. Therefore, impacts on vegetation are not analyzed in detail for the Wah Wah Mountains WSA.

2. Water Resources: There are no live waters, springs, or aquifers in the Wah Wah Mountains WSA. Therefore, impacts on water resources are not analyzed in detail in the Final EIS.

3. Mineral Resources: The public has expressed concern that wilderness designation would interfere with or prevent mineral exploration, development, and production.

There is only one 40-acre oil and gas lease within the WSA. Potential oil and gas deposits are small with a low certainty that they exist.

Even though there are 30 mining claims in the WSA, locatable mineral deposits are small and/or could not be economically developed. (see Appendix 6 in Volume I). More accessible deposits of salable minerals exist outside the WSA. For these reasons, mineral exploration or development would not occur with or without wilderness designation. Therefore, impacts on mineral and energy exploration and production are not analyzed in detail in the Final EIS.

4. Wildlife Including Special Status Species: The public is concerned that without wilderness designation mineral or other developments would destroy wildlife habitat and lead to reductions in wildlife populations. They are also concerned that use of ORVs would disturb wildlife and destroy habitat. The Wah Wah Mountains WSA provides habitat for a variety of animal species, but populations are low and no one species can be described as abundant. Two endangered and six other special status species may be found in the WSA.

Because no mineral developments are expected in the WSA, wildlife habitats would not be lost. Terrain and surface features generally restrict the use of ORVs to 5 miles of ways in two locations and ORV use is not an end in itself but occurs in conjunction with other activities. Recreation use is very low (estimated 155 visitor days use per year) and is mainly primitive. Given these conditions, impacts on wildlife habitat and populations are not significant issues for the Final EIS.

5. Forest Resources: The only forest resources in the WSA are 470 acres of pinyon-juniper woodland. There is limited access and low demand. Therefore, impacts on forest resources are not significant issues for analysis in the Final EIS.

6. Visual Resources: As discussed previously for vegetation, only 2 acres of surface disturbance are projected for the WSA in the Final EIS. Therefore, visual resources would not be significantly affected.

7. Cultural Resources: Cultural resources could be destroyed by surface-disturbing projects, use of vehicles or vandalism. However, only three cultural resource sites have been recorded in the Wah Wah Mountains WSA. No mineral-related surface disturbance is projected. Visitation is light (155 visitor days per year) and mainly primitive. Terrain and surface features limit vehicle use to the 5 miles of ways inside the WSA. Additionally, inventories for the purpose of site recordation and mitigation of impacts would take place prior to any surface disturbance in the future. Given these conditions, impacts on cultural resources are not significant issues for analysis in the Final EIS.

8. Recreation: The public has expressed concern that wilderness designation would change recreational use from motorized to primitive or, conversely, that without wilderness designation motorized recreation

will eliminate or reduce opportunities for primitive recreation. Recreational use of the Wah Wah Mountains WSA is light (estimated 155 visitor days per year), and would remain primitive with or without wilderness designation due to the terrain of the WSA and limited access. Therefore, impacts on recreation use would not be significant and they are not analyzed in detail in the Final EIS.

9. Economic Conditions: The public, including State and local government, is concerned that wilderness designation would preclude mineral or other economic developments and adversely affect local economic conditions. Others believe that primitive recreation use would increase following wilderness designation and would contribute to the local economy.

There are no existing or anticipated mineral developments or proposals for lands or realty activities which would be impaired with or without wilderness designation. Because no economic developments are expected and because recreational use is only 155 visitor days per year, impacts on economic conditions are not significant issues for analysis in the Final EIS.

- Issues Analyzed in Detail

The significant issues for the Wah Wah Mountains WSA are:

1. Impacts on the wilderness values of naturalness, opportunities for solitude and primitive recreation, and special features.

2. Impacts on livestock management including access to sheep camps and predator control.

Comments made during the public comment period for the Draft EIS centered mainly on:

1. The adequacy of the wilderness inventory.

2. Manageability of the Partial Wilderness boundary.

3. Errors in the identification of State lands in the WSA.

4. Questions on the inclusion of Crystal Peak in the proposed action.

5. State of Utah support for the Crystal Peak ONA.

6. Need for additional geologic information.

7. Need for predator control and access for livestock management.

8. Questions on BLM's ratings of opportunities for solitude and primitive recreation.

See Volume VII-B for responses to general comments applicable to all WSAs and/or the Statewide analysis and Volume VII-C, Section 11, for responses to specific comments about the Wah Wah Mountains WSA.

DESCRIPTION OF THE ALTERNATIVES

Alternatives Considered and Eliminated from Detailed Study

Alternatives that would add approximately 3,000 acres of Federal and State lands to the WSA were suggested in the public comments. These alternatives are not analyzed because the inclusion of State lands is not consistent with BLM's wilderness review guidelines (refer to Volume VII-B General Comment Response 6.4) and because other public lands did not qualify for wilderness study at the time of the wilderness inventory (refer to Volume VII-B General Comment Response 3.1).

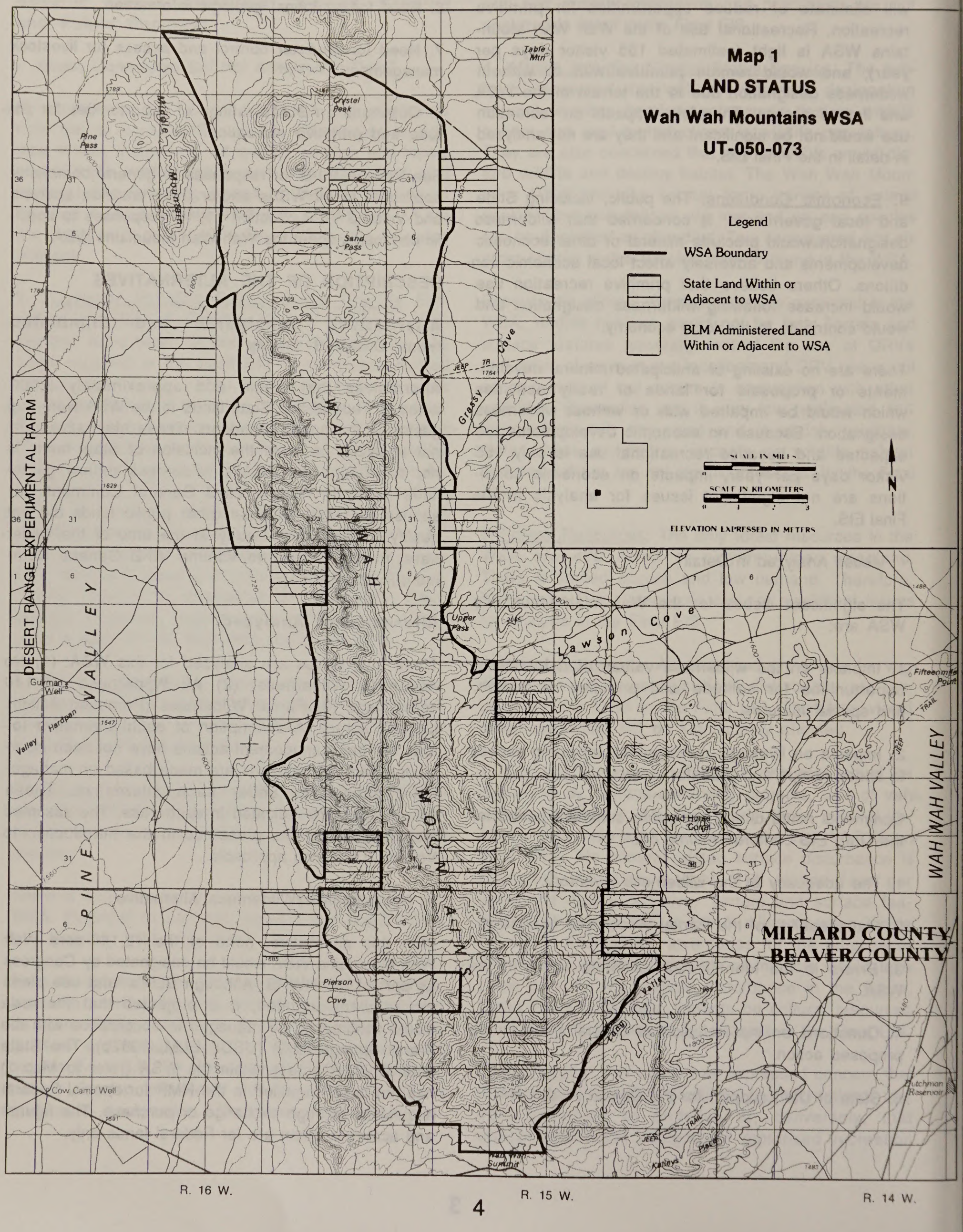
Alternatives Analyzed

Three alternatives are analyzed for this WSA: (1) No Action/No Wilderness; (2) All Wilderness (42,140 acres); and (3) Partial Wilderness (Proposed Action) (36,382 acres). A description of each alternative follows. Where management actions have not been clearly identified, assumptions are made based on management projections under each alternative. These assumptions are indicated in each case. The assumed management actions presented in the Introduction to Volume II are also applicable.

- No Action/No Wilderness Alternative

With this alternative, none of the 42,140-acre Wah Wah Mountains WSA would be designated by Congress as part of the NWPS. Although BLM's land use plans are regularly updated, it is projected that the area would continue to be managed in accordance with the Warm Springs RMP (USDI, BLM, 1987b). The State land (3,201.8 acres) within the WSA (refer to Map 1) has not been identified in the RMP for special Federal acquisition through exchange or purchase. The figures and acreages given are for Federal lands only.

WAH WAH MOUNTAINS WSA



WAH WAH MOUNTAINS WSA

• Management Conditions and Constraints

About 35,690 acres would remain open to mineral location, leasing, and sale. It is projected that 6,450 acres in two ACECs would be withdrawn from mining claim location. Development work, extraction, and patenting would be allowed on 30 existing mining claims (600 acres) and future mining claims. Development would be regulated by unnecessary or undue degradation guidelines (43 CFR 3809) without wilderness considerations. One existing post-FLPMA oil and gas lease (40 acres) and future leases could be developed under leasing Category 1 (standard stipulations) on about 35,122 acres and Category 3 (no surface occupancy) on about 7,018 acres. Although mineral resources would be managed as described above, no locatable or leasable exploration or developments are projected in the WSA because the level of known resources and the probability of their development are too low to support that assumption. Appendix 6 in Volume 1 explains the mineral exploration and development projections.

The present domestic livestock grazing use (estimates to be approximately 919 AUMs for cattle and 2,100 AUMs for sheep) in the 42,140-acre area of the WSA would continue as authorized in the RMP. The existing 1 mile of fence could be maintained without affecting wilderness considerations. No additional range improvements are planned.

Three water guzzlers would be constructed to improve wildlife habitat.

Approximately 35,690 acres would be open to ORV use and new access routes for development would be allowed. Use of all existing roads and about 5 miles of vehicular way would be allowed to continue.

Approximately 35,690 acres would be open to woodland product harvest, while 6,450 acres in two ACECs would be closed to harvest. Commercial harvest is not projected.

The area would be managed under VRM Class II on 16,100 acres, Class III on 22,540 acres, and Class IV on 3,500 acres.

• Action Scenario

BLM projects that implementation of the No Action/No Wilderness Alternative would result in approximately 2 acres of surface disturbance in the foreseeable future. This disturbance would result from the construction of three guzzlers that would be built primarily to support possible elk transplants in the WSA. No roads would be necessary to access the sites. Each guzzler would be constructed in about 2 days and would require only limited maintenance over time. No other rangeland, wildlife habitat, or watershed improvement projects are planned. No surface disturbance is anticipated from locatable or leasable minerals exploration or development.

No disturbance is projected from ORV activity due to terrain and management constraints.

Recreation use is projected to increase over the current estimated use of 155 annual visitor use days at a rate of 2 to 7 percent per year. As much as 10 percent of the use involves and would continue to involve vehicular access on the 5 miles of existing ways.

• All Wilderness Alternative

With this alternative, all 42,140 acres of the Wah Wah Mountains WSA would be designated by an act of Congress as part of the NWPS (refer to Map 2). It would be managed in accordance with the Wilderness Management Policy (BLM Manual 8560) to preserve its wilderness character. There are five sections on State land (3,201.8 acres) in the WSA.

The policy of the State is to reserve its position regarding exchange of in-held lands within any particular WSA (see Chapter 1 in Volume I). Based on this policy, it is projected that State lands would remain under existing ownership. The figures and acreages given under this alternative are for Federal lands only. No private or split-estate lands are located in the WSA.

• Management Conditions and Constraints

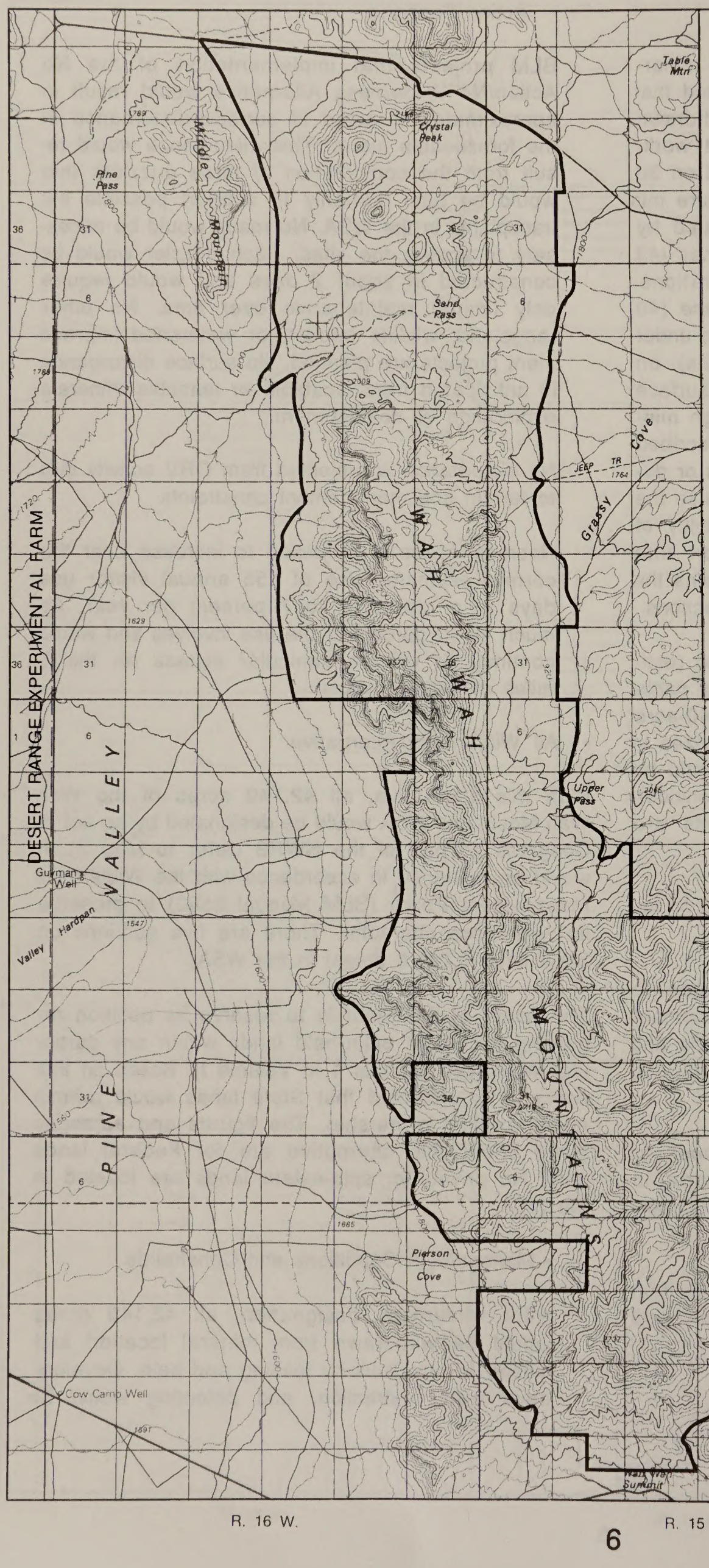
After wilderness designation, all 42,140 acres would be withdrawn from mineral location and closed to new mineral leasing and sale. Development work, extraction, and patenting would be

T. 23 S.

T. 24 S.

T. 25 S.

T. 26 S.



Map 2
ALL WILDERNESS ALTERNATIVE
Wah Wah Mountains WSA
UT-050-073

Legend

All Wilderness Alternative (42,140 acres)

SCALE IN MILES

SCALE IN KILOMETERS

N

ELEVATION EXPRESSED IN METERS

R. 16 W. R. 15 W. R. 14 W.

allowed to continue on that portion of the approximately 30 existing mining claims (600 acres) that may be determined valid. Development would be regulated by unnecessary or undue degradation guidelines (43 CFR 3809) with consideration given to wilderness values. One existing post-FLPMA oil and gas lease involving about 40 acres would be phased out upon expiration unless a find of oil or gas in commercial quantities is shown. BLM does not anticipate any mineral exploration or development following wilderness designation (refer to Appendix 6 in Volume I for the mineral exploration and development projections).

Present domestic livestock grazing would be allowed to continue as authorized in the Wah Wah Mountains MFP. The 3,019 AUMs on portions of six allotments in the WSA would remain available to livestock as presently allotted. The use and maintenance of 1 mile of fence would continue in the same manner as in the past based on practical necessity and reasonableness. New developments are not expected following designation.

The three proposed wildlife guzzlers would be designed and constructed to meet wilderness protection criteria.

The entire 42,140-acre area would be closed to ORV use except for: (1) users with valid existing rights, if approved by BLM in accordance with 43 CFR 8560; or (2) for occasional and short-term vehicular access approved by BLM for maintenance of approved livestock developments. About 5 miles of existing vehicular ways would not be available for vehicular use, except as indicated above. About 5 miles of gravel road along the northern boundary of the WSA and 1 mile of dirt road near the east side of Sand Pass, which would be cherry-stemmed, would remain open to vehicular travel. Numerous other dirt roads and jeep trails leading to the WSA from the east and west would be open to vehicular travel to the WSA boundary, where vehicular access would be terminated.

- Action Scenario

Surface disturbance would be limited to the 2 acres associated with construction of the three guzzlers described in the No Action/No Wilderness Alternative. No other rangeland, wildlife habitat, or watershed improvement projects are planned following wilderness designation. No mineral exploration or development on existing claims or leases is projected.

No disturbance from ORV use is projected due to management and terrain constraints. Recreation use is projected to increase over the current estimated use of 155 annual visitor use days at a rate of 2 to 7 percent per year. Use would be primitive in nature.

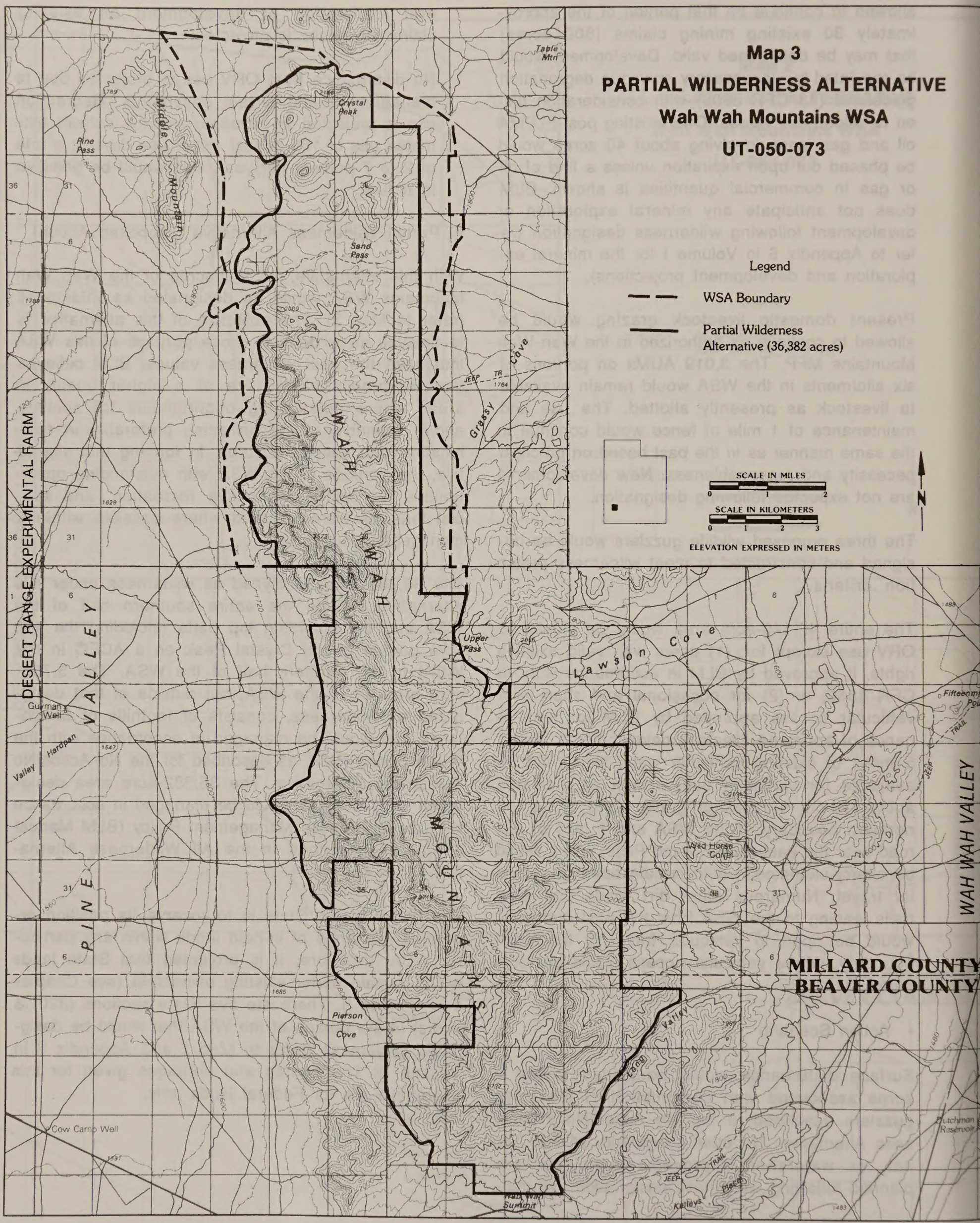
- Partial Wilderness Alternative (Proposed Action)

With this alternative, 36,382 acres of the Wah Wah Mountains WSA would be designated as wilderness (refer to Map 3). The objective of this alternative is to analyze as wilderness those portions of this WSA that have the best wilderness values. BLM believes that wilderness values are of a higher quality in areas where outstanding opportunities for solitude and/or primitive recreation exist, preferably in combination with special features. In forming this alternative, the portions of the WSA with outstanding opportunities for solitude, primitive recreation, and special features were included where possible within a manageable boundary.

The 36,382 acres analyzed as wilderness under this alternative include the entire southern half of the WSA and the mountain top parts (including the 480 acre portion of the Crystal Peak on a ACEC in the WSA) in the northern half of the WSA. The 5,758-acre area within the WSA, but outside of that designated as wilderness, consists of foothills or benchlands that would be managed in accordance with the Warm Spring RMP, as described for the No Action/No Wilderness Alternative. The 36,382-acre area designated as wilderness would be managed in accordance with the Wilderness Management Policy (BLM Manual 8560), as described in the All Wilderness Alternative.

The policy of the State is to reserve its position regarding exchange of in-held lands within any particular WSA; therefore, it is projected that State lands would remain under existing ownership (see Chapter 1 in Volume I). There are five State sections (3201.8 acres) in the portion of the WSA that would be designated wilderness (refer to Map 1 and Appendix 3 in Volume I). The figures and acreages given for this alternative are for Federal lands only.

WAH WAH MOUNTAINS WSA



• Management Conditions and Constraints

The 36,382-acre wilderness would be withdrawn from mineral entry and closed to new mineral leasing and sale. In the 36,382-acre area, development work, extraction, and patenting would be allowed to continue on 30 existing mining claims (600 acres), provided they are valid. Work would be regulated by unnecessary or undue degradation guidelines with consideration given to wilderness values. There are no oil and gas leases on the 36,382 acres, and new leases would not be issued. The 5,758-acre area not designated wilderness would be open to mineral location, leasing, and sale. There are no claims in this area at present. Development of future claims would be regulated by unnecessary or undue degradation guidelines without concern for wilderness values. The area not designated would be managed as oil and gas leasing Category 1 (standard stipulations) on 5,458 acres and Category 3 (no surface occupancy) on 300 acres. Development of an existing post-FLPMA lease (40 acres) and future leases could be allowed without concern for wilderness values. Even though portions of the WSA would be open for leasing and location of claims, BLM does not anticipate exploration or development in the foreseeable future.

Domestic livestock grazing would be allowed to continue as authorized in the Wah Wah Mountains MFP. The estimated 1,749 AUMs existing in the 36,382-acre area would be allowed to be utilized by cattle and sheep in the manner that now occurs. The existing 0.25 mile of fence could be used and maintained in the same manner as in the past based on practical necessity and reasonableness. In the 5,758-acre nonwilderness area, grazing use would be allowed to continue as authorized (estimated 1,270 AUMS) in the Warm Springs RMP. This area contains the 4 miles of existing ways now used for livestock management access, and this use would be allowed to continue. Existing facilities (0.75 mile of fence) could be used and maintained. New range developments for livestock are not proposed.

Three planned guzzlers for improvement of wildlife habitat would be designed and constructed in the wilderness area in accordance with wilderness protection standards (refer to Appendix 1 in Volume I). No wildlife improvements are currently planned for the nondesignated area.

The 36,382-acre wilderness would be closed to ORV use. The 1 mile of way in this part of the WSA would be closed to vehicular access except for situations identified in the All Wilderness Alternative. The remainder of the WSA comprising 5,758 acres, including 4 miles of way, would remain open to vehicular travel.

Harvest of forest products in the 36,382-acre wilderness would not be allowed except for harvest of pinyon nuts or noncommercial gathering of dead-and-down wood if accomplished by other than mechanical means. The remaining 5,758 acres would be open to woodland harvest.

Visual resources on the 36,382-acre wilderness would be managed in accordance with VRM Class I standards, which generally allow for only natural ecological change. The remaining 5,758 acres would be managed in accordance with VRM Class II on 500 acres, Class III on 3,058 acres, and Class IV on 2,200 acres.

• Action Scenario

In the designated portion of the WSA, construction of three guzzlers would result in 2 acres of surface disturbance as described in the No Action/No Wilderness Alternative. No other rangeland, wildlife habitat, or watershed improvement projects are planned following wilderness designation. No exploration or development of existing mining claims is projected. New mining claim location and mineral leasing would be precluded. Therefore, no mineral resource exploration or development would occur.

Disturbance from ORV activity is not projected due to terrain and management constraints.

Recreation use is projected to increase over the current estimated use of 155 annual visitor use days at a rate of 2 to 7 percent per year. As much as 10 percent of the use would involve vehicular access on 4 miles of existing ways in the nondesignated area.

Summary of Environmental Consequences

Table 1 presents the Environmental Consequences of Alternatives analyzed in detail.

WAH WAH MOUNTAINS WSA

Table 1
Summary of Environmental Consequences

Resource	Alternatives		
	No Action/No Wilderness	All Wilderness (42,140 Acres)	Partial Wilderness (36,382 Acres) (Proposed Action)
Impacts on Wilderness Values	Wilderness values would not be protected by wilderness designation. In the foreseeble future, opportunities for naturalness, solitude, and primitive recreation would be slightly reduced in quality on 2 acres of the WSA from guzzler development, from which wildlife special features would benefit. Vehicular use of 5 miles of ways would continue to occasionally detract from opportunities for solitude and primitive recreation. Special features would not be adversely affected.	Designation would preserve wilderness values throughout the WSA. In the foreseeable future, opportunities for naturalness, solitude, and primitive recreation would be slightly reduced in quality on 2 acres from guzzler development, from which wildlife special features would benefit.	Wilderness designation of 36,382 acres would result in preservation of wilderness values on about 86 percent of the WSA. In the foreseeable future, opportunities for solitude and primitive recreation would be slightly reduced in quality on 2 acres of the WSA from guzzler development, from which wildlife special features would benefit. Vehicular use of 4 miles of ways would continue to occassionally detract from opportunities for solitude and primitive recreation. Special features would be preserved.
Impacts on Livestock Management	Livestock grazing would not be adversely affected because management and access would continue as at present.	Vehicular use restrictions could inconvenience livestock operators in the area and increase predation of livestock.	This alternative would not adversely affect livestock management in the WSA because 4 of the 5 miles of ways and 58 percent of the forage would be in the nondesignated area.

WAH WAH MOUNTAINS WSA

AFFECTED ENVIRONMENT

This section describes the overall environmental setting. This information allows for independent assessment by the public (as required by the CEQ guidelines) and provides a data base for the cumulative Statewide analysis found in Volume I, as well as the Environmental Consequences of Alternatives section in this WSA.

Unless otherwise indicated, information for this section was taken from BLM staff specialists, technical reports, and file documents.

Wilderness Values

- Size

This WSA contains approximately 42,140 acres. It is approximately 20 miles long and 5 miles wide at its widest point. Approximately 35,000 acres are in Millard County (Richfield BLM District) and approximately 7,140 acres are in Beaver County (Cedar City BLM District).

- Naturalness

Overall, the WSA is natural, with the imprints of man substantially unnoticeable. There are approximately 5 miles of ways that penetrate the WSA boundary. These were judged to be substantially unnoticeable during the BLM Intensive Wilderness Inventory. In 1984 approximately 1,800 acres of the WSA in Grassy Cove were burned by wildfire. It was controlled by hand and no reclamation was necessary. Overall the WSA is natural.

- Solitude

The size and configuration of the WSA significantly contribute to the opportunities for solitude. The WSA is large enough to promote a feeling of vastness, and some of the canyons enhance opportunities for seclusion. The vertical separation between ridgetops and valley bottoms provided by the precipitous cliffs of both the east and west sides of the Wah Wah Mountains add to the opportunities for avoiding the sights and sounds of others. Vistas in all directions from the center ridgeline of the WSA contribute to a feeling of vastness and being alone.

Stands of aspen, Ponderosa pine, white fir, and bristlecone pine create overhead canopies and provide screening that enhance seclusion. There are no significant adverse sights and sounds outside the WSA that detract from the quality of solitude in the WSA. However, the Wah Wah Mountains WSA is within the South Range of the USAF's Utah Test and Training Range. The South Range runs approximately north to south from the southern boundary of the Bonneville Salt Flats to the San Francisco Mountains and east to west from the Sheeprock Mountains to 17 miles within Nevada.

This is one of the Nation's busiest military air spaces. There are 15,000 aircraft including all types of tactical fighters and bombers in the area. There are 100 to 150 (conservative estimate) aircraft flying over the area per day 6 days per week. Flights occur as low as 100 feet above the ground surface. Speeds are subsonic except in the very northern portion of the test range in the area around Ibapah, where supersonic speeds are also reached. Heaviest use areas are in the northern part of the test range (Davies, 1985). The Wah Wah Mountains WSA is in the southern portion of the range and is less affected by air traffic. However, aircraft occasionally fly directly over the WSA and these overflights cause an annoyance to visitors seeking solitude. Military overflights cause occasional off-site intrusions that detract from but do not eliminate the overall opportunities for solitude in the WSA.

Approximately 40,940 acres in the WSA provide outstanding opportunities and meet the standards for solitude. Areas on the lower benchlands west of Crystal Peak, involving approximately 1,200 acres of the WSA, do not have outstanding opportunities for solitude due to little variation in topography and low desert-shrub type vegetation.

- Primitive and Unconfined Recreation

The WSA has opportunities for backpacking, dayhiking, nature study, and photography. Opportunities for geologic sightseeing are very good due to the presence of Crystal Peak and the sheer blockfault cliffs on the west side.

Overall, 40,940 acres provide outstanding opportunities for primitive, unconfined recreation. Approximately 1,200 acres west of Crystal Peak have opportunities for primitive, unconfined recreation that are less than outstanding.

• Special Features

The special features identified, during the wilderness inventory, within the WSA are Crystal Peak and a stand of bristlecone pine. Crystal Peak (42 acres) is the thickest and most prominent example of Tunnel Springs tuff in western Utah. This white mountain is visible from distances of 50 miles or more. The bristlecone pine, rare in the region, are exceptionally large. Many reach heights of 50 feet or more in sheltered areas east of the center ridgeline. They cover some 190 acres in the central part of the WSA.

The WSA has resource values that, although not identified as such during the wilderness inventory, could be considered special features. There are two animal species (bald eagle and peregrine falcon) listed as endangered. There are six other special status animal species and three special status plant species that may occur in the WSA. (Refer to the Vegetation and Wildlife Including Special Status Species sections for more information.) Approximately 1 percent of the WSA is rated Class A for scenic quality.

• Diversity

This WSA is in the Intermountain Sagebrush Province Ecoregion, and has the PNV types of juniper-pinyon woodland and saltbush-greasewood. (Refer to the Vegetation Including Special Status Species section for more discussion on ecoregions and PNV types.) To see how the ecoregion and PNV types represented by this WSA compare Statewide and nationally with existing and potential National Wilderness Preservation Units, refer to the Wilderness Values section in Volume I.

This WSA is within a 5-hour drive from three standard metropolitan statistical areas. These are Salt Lake City-Ogden, Utah; Provo-Orem, Utah; and Las Vegas, Nevada.

Air Quality

This WSA is located in a PSD Class II area as defined in the Clean Air Act, as amended. Air quality is generally excellent with unimpaired visibility. The WSA is located near the center of the highest visual range (70+ miles) in the United States (EPA, 1979).

Geology and Topography

The Wah Wah Mountains WSA is located in the Basin and Range Physiographic Province. The province is characterized by north-south trending blockfaulted mountain ranges and sedimentary basins. The Wah Wah Mountains, which comprise most of the WSA, are an above-average example of these ranges. The WSA is bounded on the west by Pine Valley and on the east by the Wah Wah Valley. Elevations range from 5,600 feet on the west side to 8,980 feet near the south end. Crystal Peak, 7,106 feet high, is a prominent volcanic landmark on the north.

The majority of rocks exposed in the WSA consist of gently dipping limestones and dolomites of Cambrian and Ordovician age. Tertiary volcanics, ranging in composition from rhyolite to andesite, crop out throughout the WSA, and diorite stocks are exposed at the southern end. Small areas of limestone adjacent to the intrusive stocks have undergone contact metamorphism. Skarn zones are present at this contact between the diorite and limestone near the study area and may be present at depth (USDI, BLM, 1987a).

Soils

The Wah Wah Mountains' soils are derived from limestone parent material. They are alkaline, well-drained, rocky to gravelly shallow loam, with a well-developed hardpan on the lower slopes. Steep slopes with rock outcropping are typical. As slopes give way to alluvial fans and valley bottoms, the soils become denser and change from loam texture on the benches to silty texture on the valley floors. Approximately 40,140 acres of the soil in the WSA are in a slight erosion condition class. Approximately 2,000 acres in the northwest portion are in moderate erosion condition. Erosion potential is generally low throughout the WSA. Erosion conditions were determined using soil surface factors as summarized in Table 2 (terms are defined in the Glossary).

Table 2
Erosion Condition

Classification	Annual Soil Loss (cubic yards/acre)	Acres	Percent of WSA	Total Annual Soil Loss (cubic yards)
Severe	5.4	0	0	0
Critical	2.7	0	0	0
Moderate	1.3	2,000	5	2,600
Slight	0.6	40,140	95	24,084
Stable	0.3	0	0	0
Total		42,140	100	26,684

Sources: USDI, BLM, 1987b Leifeste, 1978.

Reclamation potential for this area is limited. It varies from site to site depending on soil type. Generally the darker deeper soils have greater reclamation potential than do the lighter, shallower soils which have a well-developed hardpan.

Vegetation Including Special Status Species

The primary vegetation in the WSA is pinyon-juniper woodland. Existing vegetation is categorized in Table 3.

Table 3
Existing Vegetation Types

Existing Vegetation Type	Acres	Percent of WSA
Pinyon-juniper-woodland	31,566	75
Shadscale	8,850	21
Sagebrush	1,264	3
Coniferous Forest/Aspen	460	1
Total	42,140	100

Source: Foster, 1968; USDI, BLM, 1987b.

The coniferous forest/aspen type includes aspen, white fir, and Ponderosa pine. There are also small stands of bristlecone pine on and near ridgetops. Overall there are about 190 acres of bristlecone pine in the central part of the WSA in the coniferous forest/aspen type.

No threatened or endangered plant species are known to occur in the WSA. Two Category 2 and one Category 1 candidate plant species may be found in the area. These are Cryptantha compacta, Eriogonum ammophilum and Sphaeralcea caespitosa (USDI, FWS, 1985b; see Appendix 4 in Volume I).

The Wah Wah Mountains WSA is in the Intermountain Sagebrush Province Ecoregion as shown on the Bailey-Kuchler ecosystems map (USDI, USGS, 1978). The PNV types of the WSA are juniper-pinyon woodland (25,000 acres) and saltbush-greasewood (17,140 acres).

Water Resources

There are no live water or springs within the WSA, nor have any groundwater aquifers been identified within the boundaries. The nearest groundwater aquifer is several miles from the WSA.

Mineral and Energy Resources

The energy and mineral resource rating summary is given in Table 4. Refer to Appendix 5 in Volume I for a detailed description of the SAI rating system.

Table 4
Mineral and Energy Resource Rating Summary

Resource	Rating: Favorability[a]	Rating: Certainty[b]	Estimated Resource
Oil and Gas	f2	c2	Less than 10 million barrels of oil; less than 60 billion cubic feet of gas
Uranium	f1	c1	Little to none
Geothermal	f2	c1	Low temperature resource
Beryllium	f2	c1	Less than 10 metric tons
Lead/Zinc	f2	c2	Less than 50,000 metric tons
Tungsten	f2	c1	Less than 500 metric tons

Source: SAI, 1982; USDI, BLM, 1987d.

[a]Favorability of the WSA's geologic environment for a resource (f1 = lowest favorability or smallest size deposit; f4 = highest favorability or largest size deposit).

[b]The degree of certainty that the resource does or does not exist within the WSA (c1 = lowest and c4 = highest).

The WSA could contain deposits of beryllium, lead, zinc, and tungsten that are currently listed as strategic and critical materials (USDoD, 1988).

- Leasable Minerals

There are no known deposits of leasable minerals in the WSA, nor are there any active drilling or exploration activities for leasable minerals.

- Oil and Gas

  Although oil and gas seismic surveys have taken place nearby, the geologic history of the WSA indicates that large structural traps for oil and gas are unlikely to occur. Small traps may exist in random locations. The overall favorability for the presence of small deposits occurring in the WSA is f2 with less than 10 million barrels of recoverable oil and less than 60 billion cubic feet of recoverable natural gas in-place. A low certainty (c2) has been given to the tract to reflect the potential that one or more complete sequences of Paleozoic- or Mesozoic-age rocks in lower thrust plates at depth (Molenaar, et al., 1983).

  There is one post-FLPMA lease (40 acres) in the WSA.

Of the 42,140 acres in the WSA, 35,122 acres have been designated as Category 1, and 7,018 acres on Category 3 (no surface occupancy) for oil and gas leasing. No exploration or production of oil and gas resources has occurred in the WSA.

- Geothermal

The WSA has a geologic favorability of (f2) for low temperature resources with a very low (c1) degree of certainty. None of the WSA is leased for geothermal resources and there are no market areas for geothermal energy in the vicinity of the WSA.

- Locatable Minerals

There are approximately 30 mining claims (600 acres) within the WSA.

No known deposits for locatable minerals occur within the WSA, with the possible exception of silica deposits on the north end of the WSA near Crystal Peak. Two samples analyzed by the USBM indicated that the Eureka Quartzite would be suitable for container glass and other industrial uses (USDI, USBM, 1987a).

- Beryllium

A geologic favorability for small deposits (f2) of beryllium exists within the WSA with a very low (c1) degree of certainty (SAI, 1982; Bullock, 1981).

- Tungsten

There is a very low (c1) degree of certainty that there is a geologic favorability for small deposits (f2) (SAI, 1982).

- Lead and Zinc

Due to the results of the analysis of the skarn zones and the possibility of mineralization at depth near the contact of the sedimentary units and the diorite stock, there is a low (c2) degree of certainty that small deposits (f2) of lead and zinc exist in the WSA. Minor amounts of copper, gold, silver, manganese, and molybdenum also occur. Two small iron occurrences near the southern boundary of the WSA are found within the gouge zone in altered limestone and marble near a contact with rhyolite (USDI, USBM, 1987a).

- Uranium

Favorability for uranium is very low (f1) with a low degree of certainty (c1).

- Salable Minerals

Large deposits of limestones that may be suitable for commercial development are found in the WSA. However, there are significant deposits outside the WSA, and no demand is foreseen for these materials.

Wildlife Including Special Status Species

Although a wide variety of wildlife is found in the Wah Wah Mountains (50 species of mammals, 100 species of birds, 14 species of reptiles, and one species of amphibians), no one species could be considered abundant. The WSA is considered yearlong deer range with approximately 20 deer on a yearlong basis and an additional 20 migrating into the area during the winter. About 13,000 acres of the WSA are pronghorn antelope habitat with about 10 antelope in the WSA yearlong. The WSA is a high priority area for development of water for wildlife. About 53,000 acres are yearlong chukar habitat.

Approximately 6,500 acres in the WSA are managed under the West Desert HMP (USDI, BLM, 1980c). This plan calls for the construction of three wildlife guzzlers. There are no existing or proposed vegetation manipulation projects within the WSA.

Two endangered species (bald eagle and peregrine falcon) and the golden eagle (a BLM sensitive species) are found in the WSA. Other special status species that could occur in the WSA are five Category 2 candidate species. These are the ferruginous hawk, long-billed curlew, Swainsons hawk, western snowy plover and white-faced ibis. These species are birds that frequent areas throughout the Great Basin and other parts of the western United States. Refer to Appendix 4 in Volume I for details.

Most of the area inside the WSA is considered crucial yearlong habitat for the golden eagle. This indicates that golden eagles may nest inside the WSA.

Forest Resources

The WSA contains approximately 31,566 acres of pinyon-juniper woodland. The total volumes of potential forest products within the WSA are given in Table 5. About 460 acres of conifer-aspen vegetation are

also located in the WSA. None of this is considered to be commercial coniferous forest and none of this type has been harvested.

Table 5
Total Volumes of Forest Products

Product	Amount
Firewood	50,500 cords
Fence posts	5,000 each
Timber	14 MBF[a]
Pine nuts	18,000 pounds

Source: USDI, BLM, 1973.

[a]One thousand board-feet.

No authorized commercial use has been made of the forest products in the WSA and none has been proposed. There has been some unauthorized cutting of Christmas trees in the past. Noncommercial use has been limited to firewood cutting and pine nut gathering. It is estimated that approximately 100 cords of firewood and an unknown but small amount of pine nuts are harvested annually. Approximately 6,450 acres in two ACECs are closed to timber harvest.

Livestock and Wild Horses/Burros

There are portions of six grazing allotments within the WSA that are used by nine permittees. Available forage is estimated at 919 AUMs for cattle and 2,100 AUMs for sheep. Season of use is generally October 15 to May 15. Refer to Table 6 for specific livestock grazing use information. Existing ways (totaling 5 miles) that penetrate the WSA are used by the permittees as access for hauling salt and water and for sheep camps. Sheep camps are generally located in the WSA in the Pine Valley, Crystal Peak, Vorhees, and Hardpan allotments. Ways are also used by the BLM for allotment management and studies. A 1 mile fence is the only existing range improvement. No additional range improvements are proposed.

There are no wild horses or burros inhabiting this WSA.

Visual Resources

The Wah Wah Mountains are one of the most remote, untouched mountain ranges in the West Desert. The west face of the range is comprised of sheer cliffs displaying grey tones of limestone strata. A high plateau above the cliffs and the adjoining canyons contain desert shrub, pinyon-juniper, aspen, Ponderosa pine, white fir, and bristlecone pine. The surrounding benchlands contain light-tan desert shrub dotted with dark-green juniper trees. Crystal Peak, a mountain of white ash-flow tuff, lies at the northern end of the WSA. This highly unusual formation, which can be seen for 50 miles, is a Millard County landmark. Pinyon-juniper woodland and a few Ponderosa pine are scattered around the base of the peak. Crystal Peak, consisting of 42 acres (less than 1 percent of

Table 6
Livestock Grazing Use Data

Allotments	Total Acres	Acres in WSA	Total AUMs	Number of AUMs in WSA	Number and Kind of Livestock	Season of Use	Number of Operators
Brecks Knoll	69,393	3,940	5,752	366	885 Cattle	11/01-05/15	2
Pine Valley	40,565	10,080	3,750	550	445 Cattle	11/01-05/15	1
Crystal Peak	61,893	10,720	4,831	734	3,750 Sheep	10/16-04/30	3
Wah Wah Lawson Cove	99,636	7,670	9,707	559	885 Cattle 2,643 Sheep	10/17-06/21 12/20-05/28	1
Voorhees	26,958	3,840	3,076	247	3,417 Sheep	12/01-04/15	1
Hardpan	40,277	5,890	2,390	563	1,930 Sheep	10/10-05/15	1
Total	338,722	42,140	29,506	3,019			9

Sources: USDI, BLM, 1987b and BLM File Data.

the WSA), is rated as exceptional (Class A) scenery due to its distinctive character. Some 77 percent (32,406 acres) of the Wah Wah Mountains WSA is rated as high to moderate (Class B) scenery. This area contains a wide variety of vegetation and rugged, interesting topographic features with numerous color combinations. Twenty-three percent (9,692 acres) of the area is rated as average (Class C) scenery due to the muted color tones in vegetation and only moderate variety in topography. Approximately 16,100 acres is managed as VRM Class I, 22,540 acres as Class III, and 3,500 acres as Class IV. (Appendix 7 in Volume I explains the BLM VRM rating system.)

Cultural Resources

According to BLM cultural resource site maps, three archaeological sites have been recorded in the WSA (USDI, BLM, 1988). These sites are near Crystal Peak in the northern portion of the WSA. The potential for additional sites is relatively high, but site density is expected to be low.

There are no recorded historic sites, National Register sites, or National Register nominees within the WSA.

Recreation

There are presently an estimated l55 visitor days attributed to recreational activities in the WSA. Current visitor day use is as follows: 25 for fossil collecting; 32 for geologic sightseeing; and 98 for botanical sightseeing. Most are attributed to hiking in conjunction with botanical and geological sightseeing.

The quality of 15 recreational opportunities were evaluated. Fourteen recreational opportunities are present in varying degrees. A summary of selected activities follows. The sheer limestone cliffs and Crystal Peak provide very good geologic sightseeing opportunities. Opportunities for backpacking, dayhiking, nature study, and photography are good. Factors contributing to these opportunities include the length of the mountain range (19 miles), the variety of terrain and vegetative types, and numerous eagles, hawks, and other wildlife.

Opportunities for camping, hunting, horseback riding, rock climbing, rock hounding, skiing, cultural sightseeing, scenic sightseeing, and wildlife sightseeing are average to poor due to a lack of water, steep, rugged terrain, low number of specimens, etc.

Steep topography generally restricts ORV use to 5 miles of ways in two locations. Vehicular activity is not considered an end in itself but occurs in conjunction with other activities. As much as 10 percent of the recreational use involves vehicular access on the ways.

Land Use Plans

The WSA is BLM-administered public land except for five State sections (3201.8 acres). There are no private or split-estate lands in the WSA. The current State policy is to maximize economic returns from State lands and to reserve its position regarding exchange of in-held lands (see Chpater 1 in Volume I). In 1986, the Utah State Legislature passed S.C.R. No. 1 opposing any additional wilderness designation in Utah and urging that State lands not be exchanged out of wilderness areas. Two of the five in-held State sections are under grazing permits, and grazing is the only current activity on these lands.

The Millard and Beaver County Master Plans (Paul Nelsen Associates, Inc., 1981 and Mountain Area Planners, 1970) do not specifically address wilderness. The counties believe that Federal lands in their counties should be generally utilized to their greatest economic potential under a multiple-use concept.

The Beaver County Master plan zones the Wah Wah Mountains as "range and forest" and "multiple use." These zones are recommended for minimum habitation.

The County Commissions have endorsed the Consolidated Local Government Response to Wilderness (Utah Counties, 1986) that opposes wilderness designation of BLM lands in Utah.

The current BLM planning document for the majority of the Wah Wah Mountains WSA is the Warm Springs RMP (USDI, BLM, 1987b). Wilderness is not addressed in the Warm Springs RMP. Wilderness designation is part of the BLM multiple-use concept. The BLM land use plan is linked to the Statewide Wilderness EIS through inclusion of the present plan as the No Action/No Wilderness Alternative.

The Wah Wah Mountains WSA is in the South Range of the USAF's Utah Test and Training Range. The USAF position is that low level military overflights of the Utah Test and Training Range, including the Wah Wah Mountains WSA, would continue with or without wilderness designation (USAF, 1986).

WAH WAH MOUNTAINS WSA

Socioeconomics

- Demographics

The Wah Wah Mountains WSA is located primarily (35,000 acres) in Millard County, Utah, with a small portion (7,140 acres) in Beaver County. The WSA is approximately 50 miles west of Delta, Utah. The nearest community is Milford, in Beaver County, approximately 35 miles east of the WSA.

From 1970 to 1980, the population of Millard County grew by approximately 28.4 percent to 9,050. A major portion of the Millard County population lives in Delta and Fillmore. It is estimated that between 1980 and 1987, population increased to about 10,415. Population projections for the county indicate that the number of people living in Millard County in the year 2010 will be about 12,900 for about a 43 percent increase over 1980 levels.

From 1970 to 1980, the population of Beaver County grew by approximately 15 percent to 4,400. Beaver is the largest community in Beaver County. It is estimated that between 1980 and 1987, population increased to about 4,960. Population projections for the county indicate that the number of people living in Beaver County in the year 2010 will be about 6,200 for about a 41 percent increase over 1980 levels (Utah Office of Planning and Budget, 1987).

Table 7 presents baseline and projected population data for Millard and Beaver Counties.

Table 7
Baseline and Projected Population and Employment Growth
Millard and Beaver Counties

	1980	1990	2000	2010
Millard County				
Population	9,050	11,000	11,600	12,900
Employment	3,645	5,500	6,000	6,700
Beaver County				
Population	4,400	5,200	5,500	6,200
Employment	1,585	2,000	2,300	3,000

Source: Utah Office of Planning and Budget, 1987.

- Employment

Table 7 shows the baseline and projected total employment for the Millard and Beaver Counties to the year 2010.

The government sector (Federal, State, and local) is the most important in terms of employment in the Millard and Beaver County economies. Farm employment makes up about 26 percent of the total employment in Millard and 6.2 percent of the total employment in Beaver county.

The Intermountain Power Project contributes significantly to employment in Millard County, while mining has been declining in recent years in both counties.

Millard County is part of the Central MCD. Table 8 shows the baseline (1980) and projected employment by source for MCD to the year 2010. In 1980 the leading employment sectors for the MCD were government (21 percent), agriculture (20 percent), and trade (14 percent).

Table 8
Central Multi-County District
Employment[a]

	1980	1990	2000	2010
Agriculture	3,649	3,500	3,600	3,800
Mining	706	700	800	900
Construction	822	1,400	1,800	2,200
Manufacturing	2,047	1,900	2,200	2,600
Transportation, Utilities	589	1,300	1,400	1,500
Trade	2,604	3,400	4,000	4,900
Finance, Insurance, Real Estate	347	400	500	600
Services	1,439	2,300	2,900	3,500
Government	3,919	4,100	4,100	4,900
Nonfarm Proprietors	2,278	2,800	3,300	4,100
Totals	18,400	21,800	24,600	29,000

Source: Utah Office of Planning and Budget, 1987.

[a]Includes Juab, Millard, Piute, Sanpete, Sevier, and Wayne Counties.

Mining provided approximately 4 percent of the direct employment in the MCD. It is projected that by the year 2010 employment in the MCD will increase by approximately 58 percent. Trade will increase to 17 percent, and services to 12 percent of the total. Government will decline to 17 percent, agriculture to 11 percent, and mining to 3 percent of the total.

Beaver County is part of the Southwest MCD. Table 9 shows the baseline (1980) and projected employment by source for the MCD to the year 2010. In 1980 the leading employment sectors for the Southwest MCD were government (23 percent), trade (20 percent), and nonfarm proprietors (12 percent). Mining provided approximately 2 percent of the direct employment in the MCD. It is projected that by the year 2010, employment in the Southwest MCD will increase by approximately 58 percent. Services will

increase to 20 percent of the total. Agriculture will decline to 3 percent, mining to less than 1 percent, and government to 18 percent of the total MCD employment.

Table 9
Southwest Multi-County District
Employment[a]

	1980	1990	2000	2010
Agriculture	1,810	1,700	1,600	1,500
Mining	499	300	300	400
Construction	1,308	1,700	2,300	3,100
Manufacturing	1,498	2,000	2,600	3,300
Transportation, Utilities	1,006	1,300	1,800	2,500
Trade	4,120	6,800	8,800	11,200
Finance, Insurance, Real Estate	785	1,100	1,400	1,800
Services	2,184	5,100	6,900	8,900
Government	4,616	5,800	6,500	8,100
Nonfarm Proprietors	2,386	3,100	3,500	4,700
Totals	20,212	28,900	35,700	45,500

Source: Utah Office of Planning and Budget, 1987.

[a]Includes Beaver, Garfield, Iron, Kane, and Washington Counties.

Delta and Fillmore in Millard County, about 80 miles north and northeast of the WSA, as well as Milford in Beaver County, are the main gateways and service areas for visitors to the WSA.

- Sales and Revenues

Economic-related activities in the WSA include mineral exploration, livestock production, woodland production, and recreation. Table 10 summarizes local sales and Federal revenues from the WSA. Appendix 9 in Volume I identifies the multipliers used to estimate sales and revenues.

Table 10
Sales and Revenues

Source	Estimated Annual Local Sales[a]	Estimated Annual Federal Revenues
Oil and Gas Leases	None	$ 80
Mining Claim Assessment	$ 3,000	0
Livestock Grazing	$60,380	$4,649
Woodland Products	$7,500[b]	500
Recreational Use	$ 635	0
Total	$71,515	$5,229

Sources: BLM File Data; Appendix 9 in Volume I.

[a]Local sales represent money potentially spent. They do not account for the total income that would be generated by these expenditures.

[b]This is the value of the forest products to those who harvest them and may not be directly related to local sales.

The WSA has 30 mining claims. Regulations require a $100 annual expenditure per claim for labor and improvements, an undetermined part of which is spent in the local economy. Not all of the claims are current in assessment.

No oil and gas or mineral production has occurred in the WSA. Therefore, mineral and energy resource production from the WSA has not contributed to local employment or income.

Nine livestock operators have a total grazing privilege of 3,019 AUMs within the WSA. If all this forage were utilized, it would account for $60,380 of livestock sales and $15,095 of ranchers' returns to labor and investment.

It is estimated that about 100 cords of firewood have been harvested annually from the WSA for private use. The sales value of the wood is about $7,500. In addition, a small amount of pine nuts are gathered each year. These harvests are small and insignificant to the local economy and only of minor significance to those involved in the harvest.

The WSA's recreational use and related local expenditures are low and insignificant to both the local economy and individual businesses. The actual amount of income generated locally from recreational use in the WSA is unknown. However, an approximate range of expenditures can be deduced from Dalton (1982). This study indicates that the Statewide average expenditures per recreational visitor day for all types of recreation in Utah are approximately $4.10. The recreational use for the Wah Wah Mountains WSA is estimated as about 155 visitor days per year. Only a portion of the expenditures for recreational use of the WSA contribute to the local economy of Millard and Beaver Counties.

The WSA generates Federal revenues from mineral leases and livestock sources (refer to Table 10).

Oil and gas leases in the WSA cover approximately 40 acres. At $2 per acre, lease rental fees generate up to $80 of Federal revenues annually. Half of these monies are allocated to the State, which then reallocates these revenues to various funds, the majority of which are related to energy development and mitigation of local impacts of energy and mineral development.

Average actual livestock use and, therefore, Federal revenues generated from grazing in the WSA are

unknown; however, the permittees in the WSA can use up to 3,019 AUMs per year. Based on a $1.54 per AUM grazing fee, the WSA can potentially generate $4,649.26 of grazing fee revenues annually, 50 percent of which would be allocated back to the local BLM District for the construction of rangeland improvements.

No commercial permits for woodland harvest or recreation have been issued for the WSA; therefore, no Federal revenues are generated from these resources.

ENVIRONMENTAL CONSEQUENCES OF ALTERNATIVES

No Action/No Wilderness Alternative

- Impacts on Wilderness Values

Because the WSA would not be designated wilderness with this alternative, the identified wilderness values would not receive the degree of protection afforded by application of the Wilderness Management Policy (BLM Manual 8560). Wilderness values in the WSA would be somewhat protected by limitations placed on potential surface-disturbing activities (i.e., VRM Class II management on 16,100 acres, oil and gas leasing Category III [no surface occupancy] on 7,018 acres, ORV closure on 6,450 acres, and withdrawal to mineral location on 6,450 acres).

In the foreseeable future, disturbance of approximately 2 acres from development of three guzzlers would result in a slight reduction in the quality of naturalness and opportunities for solitude and primitive, unconfined recreation in the disturbed areas. Special features including Crystal Peak, 42 acres of Class A quality scenery, and special status animal and plant species would not be negatively affected because the disturbance would be minor (involving only 0.005 percent of the WSA), and would not be located where the special features are located. Proposed guzzlers would benefit wildlife special features because water sources would increase.

Appropriate measures would be taken to protect threatened or endangered species prior to any surface-disturbing activity, and no negative impact would occur to these species.

Because future vehicular use would generally be limited by terrain to existing vehicular ways, no additional disturbance from ORV activity is anticipated in the future. The continued and increased use of existing ways would continue to detract from opportunities for solitude and primitive recreation.

The increased visitor use that would occur over time would not be expected to reduce wilderness values because the use would be largely primitive in nature and the WSA is large enough to incorporate the additional use adequately.

Military overflights would continue to be an occasional annoyance that would detract from opportunities for solitude and primitive recreation in the WSA.

Disturbance that would occur over the long term and, therefore, the long-term loss of wilderness values that would occur is not accurately known. Loss would occur as intrusions increase.

Conclusion: Wilderness values would not be protected by wilderness designation. In the foreseeable future, naturalness and opportunities for solitude and primitive recreation would be slightly reduced in quality on 2 acres of the WSA. Special features would not be adversely affected.

- Impacts to Livestock Management

No change would occur in present livestock management.

Conclusion: No change would occur in present livestock management.

All Wilderness Alternative (42,140 Acres)

- Impacts on Wilderness Values

Designation and management of all 42,140 acres as wilderness would preserve the wilderness values in the Wah Wah Mountains WSA. The potential for surface-disturbing activities would be eliminated through closure of the entire area to future mineral leasing and location and to ORV use, and through management of the area as VRM Class I which allows for only natural ecological change. Naturalness would be preserved on all 42,140 acres. Solitude would be protected on approximately 40,940 acres that meet and 1,200 acres that do not meet the standards for outstanding opportunities. Primitive and unconfined recreation would be preserved on approximately 40,940 acres that meet and 1,200 acres that do not meet the standards for outstanding opportunities. Resources that could be considered as special features in the

WSA; including Crystal Peak, Class A scenery, and endangered and sensitive plant and animal species; would also be preserved.

In the foreseeable future, disturbance of up to 2 acres is anticipated from development of three guzzlers. The guzzlers would be designed to meet wilderness management criteria, and upon completion would not be substantially noticeable in the area as a whole. Wilderness values would be slightly reduced in quality on the disturbed areas. Special features, including Crystal Peak, 42 acres of Class A scenery, and special status plant and animal species; would not be negatively affected because disturbance would be minor (involving only 0.005 percent of the WSA) and would not be located where the special features are located. Guzzlers would benefit wildlife special features associated with wilderness because they would be additional water sources. Appropriate measures would be taken to protect threatened or endangered species prior to any surface-disturbing activity, and no negative impact would occur to these species.

Increased visitor use that would occur would be primitive in nature and would be managed so as to not result in loss of wilderness values.

Military overflights would continue to be an occasional annoyance that would detract from opportunities for solitude and primitive recreation in the WSA.

Conclusion: Wilderness designation would preserve the wilderness values throughout the WSA. In the foreseeable future, naturalness and opportunities for solitude and primitive recreation would be slightly reduced in quality on 2 acres of the WSA.

- Impacts on Livestock Management

Present domestic livestock grazing would continue as authorized in accordance with the Warm Springs RMP. The 3,019 AUMs currently allocated in the WSA are controlled by nine livestock permittees. Vehicles are used frequently during the grazing season to manage livestock and supply sheep camps in the Pine Valley, Crystal Peak, Voorhees, and Hardpan allotments. Some limitations on vehicular use may occur, and sheep camps may not have ready access. This could be inconvenient for permittees and result in increased costs of management.

Predator control would be restricted to approved methods, and slight increases in sheep losses to predators on public, private, and State lands within and near the WSA would result. Increases in sheep losses would probably be slight because several methods of predator control could still be utilized.

Conclusion: Restrictions on access and predator control would result in slight increases in predation on sheep and inconvenience to livestock permittees. Management costs and sheep losses to predators would increase.

Partial Wilderness Alternative (Proposed Action) (36,382 Acres)

The major activities that would occur in the designated portion of the WSA for this alternative are the same as described for the All Wilderness Alternative. For the nondesignated portion, management would be as described for the No Action/No Wilderness Alternative. The specific actions that would take place within the 36,382-acre area designated as wilderness and the 5,758-acre nondesignated area are discussed in the Description of the Alternatives section.

- Impacts on Wilderness Values

Wilderness designation of 36,382 acres would preserve wilderness values in the designated portion of the WSA. With this alternative, the potential for surface-disturbing activities that could impair wilderness values in the designated area would be eliminated through management under VRM Class I (which generally allows for only natural ecological change), through ORV closure, and through closure of the area for future mineral leasing and location. Naturalness (all 36,382 acres meet the standard), outstanding opportunities for solitude (all 36,382 acres meet the standard), and primitive recreation (all 36,382 acres meet the standard) would be preserved. Crystal Peak which represents the best geologic and scenic features of the WSA and the areas of bristlecone pine would be protected.

In the foreseeable future, a slight reduction in quality of naturalness and opportunities for solitude and primitive recreation due to allowable surface disturbance from guzzler development would occur on up to 2 acres within the designated portion. The projects would be designed to meet wilderness management criteria and no wilderness values would be lost. Wildlife special features would benefit from the additional water sources.

Elimination of ORV use in the designated area would improve opportunities for solitude and primitive

recreation overall in the WSA, although vehicular use of 4 miles of ways in the nondesignated area would continue to detract from these opportunities during the period of activity.

Overflights by military aircraft would continue to be an occasional annoyance that would detract from opportunities for solitude and primitive recreation in the WSA.

The extent to which disturbance would occur in the nondesignated area over the long term and, therefore, the long-term loss of wilderness values that would occur, is not accurately known. Loss would occur as intrusions increase.

Conclusion: Wilderness values would be preserved in the designated area which is approximately 86 percent of the WSA. In the foreseeable future, naturalness and opportunities for solitude and primitive recreation would be slightly reduced in quality on 2 acres in the designated area. Special features would be preserved.

- Impacts on Livestock Management

The effect from designation of 36,382 acres of the WSA as wilderness on domestic livestock grazing would be essentially the same as with the No Action/ No Wilderness Alternative. Of the 3,019 AUMs allocated, approximately 1,749 (58 percent) would be within the designated portion of the WSA and 1,270 acres within the nondesignated portion. The existing fence could continue to be maintained (only 0.25 mile of fence would be within the designated area). Of the 5 miles of existing vehicular ways, only 1 mile is within the area that would be designated. This would reduce but not eliminate the potential for inconvenience or hardship to permittees who presently use the ways for hauling water and salt to manage sheep camps. Predator control would continue under State law and APHIS regulation on 14 percent of the WSA. Any increase in livestock losses to predators would be slight because several methods of predator control would be available.

Conclusion: The Partial Wilderness Alternative would not adversely affect livestock management in the WSA.

BIBLIOGRAPHY

VOLUME II

Adkins, Anthony R. and Rata, J. C. 1984. "General Geology of the Carlin Gold Mine "in Field Trip Guidebook. Presented at the Regional Symposium for the Association of Exploration Geochemists, Reno, Nevada. pp. 17-23.

Almquist, C. 1987. "Mineral Investigation of a Part of the North Stansbury Mountains Wilderness Study Area, UT-020-089, Tooele County, Utah." Report MLA 49-87. U.S. Department of the Interior, Bureau of Mines, Salt Lake City, Utah.

Anderson, R. E. 1983. Cenezoic Structural History of Selected Areas in the Eastern Great Basin, Nevada-Utah. OFR 83-504. U.S. Department of the Interior, Geological Survey, Salt Lake City, Utah.

Bangerter, The Honorable Norman H. 1986a. "Consistency of the Warm Springs Resource Management Plan with State and Local Policies and Planning" (personal communication). November 5, 1986. State of Utah, Office of the Governor, Salt Lake City, Utah.

Bangerter, The Honorable Norman H. 1986b. "Consistency of the House Range Resource Management Plan with State and Local Policies and Planning (personal communication). November 5, 1986. State of Utah, Office of the Governor, Salt Lake City, Utah.

Beatty, David W. et. al. 1986. "Geology and Geochemistry of the Deer Trail Pb-Zn-Ag-Au-Cu Manto Deposits, Marysvale District, West Central Utah" in Economic Geology. Volume 81, pp. 1932-1952.

Beckman, R. T. and Kerns, W. A. 1965. Mercury in Utah. Information Circular 8252. U.S. Department of the Interior, Bureau of Mines. pp. 352-357.

Benton, Robert. 1980. "Critical Habitat Recommendations for the Bald Eagle on the Bureau of Land Management, Salt Lake District" (unpublished document). U.S. Department of the Interior, Bureau of Land Management, Pony Express Resource Area, Salt Lake City, Utah.

Benton, Robert. 1982. "Peregrine Falcon Habitat in the Tooele Environmental Impact Statement Area" (personal communication). November 17, 1982. U.S. Department of the Interior, Fish and Wildlife Service, Salt Lake City, Utah.

Berger, Byron R. et al. 1986. "Geochemistry of Volcanic Rocks, Round Mountain Mining District, Nevada." Report 41. Nevada Bureau of Mines and Geology, Reno, Nevada. pp. 131-134.

Bick, K. F. 1966." Geology of the Deep Creek Mountains, Tooele and Juab Counties, Utah." Bulletin 77. Utah Geological and Mineral Survey Salt Lake City, Utah.

Bonham, Harold F., Jr. and Giles, David. 1983. "Epithermal Gold/Silver Deposits: The Geothermal Connection." Special Report 13. Geothermal Resources Council. pp. 257-262.

Bonham, Harold F., Jr.. 1984. "General Geology of the Carlin Gold Belt." Report 40. Nevada Bureau of Mines and Geology, Reno, Nevada. pp. 69-70.

Bortz, Louis C. 1983. "Hydrocarbons in the Northern Basin and Range, Nevada and Utah." Special Report 13. Geothermal Resources Council.

Bowers, J. F. 1979. "Visibility Impacts in Western Utah From the Intermountain Power Project" (personal communication). May 4, 1979. H. E. Cramer Company, Salt Lake City, Utah.

Bowyer, Ben et. al. 1963. "Beryllium and Uranium Mineralization in Western Juab County, Utah" in Guidebook to the Geology of Utah. Number 17. Utah Geological Society, Salt Lake City, Utah.

Brigham Young University and Weber State College. 1981. Atlas of Utah. Brigham Young University Press, Provo, Utah.

Bucknam, R. C. 1977. "Map of Suspected Fault Scarps in Unconsolidated Deposits, Tooele 1 Degree x 2 Degree Sheet, Utah." Open File Report. U.S. Department of the Interior, Geological Survey, Salt Lake City, Utah.

BIBLIOGRAPHY - VOLUME II

Buffa, Joelle. 1983a. "Crucial Mule Deer Range Within the North Stansbury Mountains WSA" (personal communication). November 1983. U.S. Department of the Interior, Bureau of Land Management, Pony Express Resource Area. Salt Lake City, Utah.

Buffa, Joelle. 1983b. "Federally Designated Critical Habitat for the Bald Eagle Within the North Stansbury Mountains WSA" (personal communication). November 1983. U.S. Department of the Interior, Bureau of Land Management, Pony Express Resource Area, Salt Lake City, Utah.

Bullock, Kenneth C. 1981. "Minerals and Mineral Localities of Utah." Bulletin 117. Utah Geological and Mineral Survey, Salt Lake City, Utah.

Buranek, Alfred M. 1942. "Report on the Lead Ore Mine Tooele County, Utah." Circular No. 9. Utah Geological and Mineral Survey, Salt Lake City, Utah.

Burt, Donald M. and Sheridan, M. F. 1986. "Mineral Deposits Related to Topaz Rhyolites in the Southwest" in Arizona Geological Society Digest, Volume XVI, Arizona Geological Society. pp. 170-178

Butler, B. S. et al. 1920. "The Ore Deposits of Utah." Professional Paper 111. USDI, Geological Survey, Salt Lake City, Utah.

Cadigan, R. A. et al. 1979. "Evaluation of the Potential for Uranium and Other Mineral Resources in the Deep Creek Mountains Withdrawal Area, Juab County, Utah." Open File Report 79-1304. USDI, Geological Survey Salt Lake City, Utah.

Carraher, Ruth. 1984. "Bell Mine--Jerritt Canyon" in Field Trip Guidebook. Presented at the Regional Symposium for the Association of Exploration Geochemists, Reno, Nevada.

Casaceli, R. S. et. al 1986. "Geology and Mineralization of the McGinness Hills, Lander County, Nevada." Report 41. Nevada Bureau of Mines and Geology, Reno, Nevada. pp. 93-102.

Council on Environmental Quality (CEQ). 1980. "Interagency Consultation to Avoid or Mitigate Adverse Effects on Rivers in the Nationwide Inventory" (personal communication). August 10, 1980. Washington, D.C.

Cordell, H. Ken and Hendee, John C. 1982. Renewable Resources Recration in the United States: Supply, Demand, and Critical Policy Issues. August 1982. American Forestry Association, Washington, D.C.

Cronquist, Holmgren, Holmgren, and Reveal. 1972. Intermountain Flora. Volume 1. Hafner Publishing Company, Inc., New York, New York.

Dalton, G. 1987. Disseminated Gold Deposits in the Swasey Mountains (personal communication).

Dalton, Michael J. 1982. "Outdoor Recreation in Utah: The Economic Significance." Prepared for the Utah Division of Parks and Recreation, Department of Natural Resources, Salt Lake City, Utah.

Davies, W., Lt. Colonel. 1985. "Aircraft Overflights Related to Wilderness Study Areas" (personal communication). January 1985. Air Force Representative, Federal Aviation Administration, Aurora, Colorado.

Davis, B. L. 1959. "Petrology and Petrography of the Igneous Rocks of the Stansbury Mountains, Tooele County, Utah" in Brigham Young University Research Studies, Geology Series. Volume 6, No. 2, Brigham Young University, Provo, Utah.

DeCourten, Frank. 1982. "Geology of The Deep Creek Mountains" (personal communication). Associate Professor of Geology, University of Utah, Salt Lake City, Utah.

Doelling, Helmut H. and Perry, Lee I. 1979. "Mineral Potential of the Deep Creek Mountains Bureau of Land Management Wilderness Withdrawal, Juab County, Utah." Investigation Report 117. Utah Geological and Mineral Survey, Salt Lake City, Utah.

Dommer, Martin L. 1979. "Geology of the Drum Mountains: Millard and Juab Counties, Utah." Master's Thesis, Brigham Young University. Provo, Utah.

Durrant, S. D. 1952. Mammals of Utah--Taxonomy and Distribution. Museum of Natural History, Lawrence, Kansas.

Ekburg, Charles E. 1984. "General Geology of the Maggie Creek Gold Deposit, Eureka County, Nevada." Report 40. Nevada Bureau of Mines and Geology, Reno, Nevada. pp. 65-68

BIBLIOGRAPHY - VOLUME II

Eighty-Eighth Congress of the United States. 1964. Wilderness Act. Public Law 88-577. September 3, 1964. U.S. Government Printing Office, Washington, D.C.

El-Shatourg, H. M. and Whelan, J. A. 1970. "Mineralization of the Gold Hill Mining District, Tooele County, Utah." Bulletin 83, Utah Geological and Mineralogical Survey, Salt Lake City, Utah.

England, Larry. 1982. "Threatened and Endangered Plants in the Tooele Environmental Impact Statement Area" (personal communication). November 10, 1982. USDI, Fish and Wildlife Service Area Office, Salt Lake City, Utah.

Environmental Protection Agency (EPA). 1979. Protecting Visibility--An EPA Report to Congress. October 1979. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina.

Fawcett, G. Allen. 1985. "Juab County Master Plan and Land Use Preferences" (personal communication). March 1985. Six County Commissioners Organization, Richfield, Utah.

Federal Emergency Management Agency. 1983. Stockpile Report to the Congress. September 1983. U.S. Government Printing Office, Washington, D.C.

Fisher, D. G. and Juilland, J. D. 1986. "Mineral Deposit Types and Their Characteristics." Technical Reference 3031-1. U.S. Department of the Interior, Bureau of Land Management, Salt Lake City, Utah.

Foster, Robert H. 1968. "Distribution of Major Plant Communities in Utah." May 1968. Brigham Young University, Provo, Utah.

Gallizioli, S. 1977. "Overgrazing on Desert Bighorn Ranges." Transactions of the Desert Bighorn Council. Edition 21. pp. 21-23.

Gifford, Robert L. 1980. "Mining and Reclamation Plan--Rocking Chair Mine" (unpublished document). A. U. Associates, Salt Lake City, Utah.

Guisti, Vince. 1977. "Water Resources--Intermountain Power Project Technical Report (unpublished document). April 3, 1977. U.S. Department of the Interior, Geological Survey, Salt Lake City, Utah.

Hauck, F. R. 1977. Cultural Resource Evaluation in Central Utah, 1977. Cultural Resource Series No. 3, U. S. Department of the Interior, Bureau of Land Management, Utah State Office, Salt Lake City, Utah.

Havenstrite, Stuart R. 1984. "Geology and Ore Deposits of the Taylor Silver District" in Field Trip Guidebook. Presented at the Regional Symposium for the Association of Exploration Geochemists, Reno, Nevada.

Hayward, C. L.; Cottam, C; Woodbury, A. M.; and Frost, H. H. 1976. "Birds of Utah" in Great Basin Naturalist Memoirs. Brigham Young University, Provo, Utah.

Hilpert, L. S.; and Roberts, R. J. 1964. Economic Geology in Mineral and Water Resources of Utah. Bulletin 73, Utah Geological and Mineral Survey, Salt Lake City, Utah.

Hintze, Lehi F. 1973. "Geologic History of Utah" in Geology Studies. Volume 20, Part 3. Brigham Young University, Provo, Utah.

Hintze, Lehi F. 1980a. Geologic Map, Sand Pass NE and Sand Pass SE. Quadrangle, Utah. Map MF-1150. U. S. Department of the Interior, Geological Survey, Salt Lake City, Utah.

Hintze, Lehi F. 1980b. Geologic Map, Sand Pass SW. Quadrangle, Utah. Map MF-1151. U. S. Department of the Interior, Geological Survey, Salt Lake City, Utah.

Hintze, Lehi F. 1980c. Geologic Map of Utah (1:500,000). Utah Geological and Mineral Survey, Salt Lake City, Utah.

Hintze, Lehi F. 1981a. Geologic Map, Marjum Pass and Swasey Peak SW. Quadrangle, Utah. Map MF-1150. U. S. Department of the Interior, Geological Survey, Salt Lake City, Utah.

Hintze, Lehi F. 1981b. Geologic Map, Whirlwind Valley NW and Whirlwind Valley SW. Quadrangle, Utah. Map MF-1150. U. S. Department of the Interior, Geological Survey, Salt Lake City, Utah.

Hintze, Lehi F. 1985. "Correlation of Stratigraphic Units of North America (Cosuna) Project, Great Basin Region" (unpublished document). American Association of Petroleum Geologists.

Hof, John and Kaiser, F. 1981. "Long-Term Recreation Participation Projections for Public Land Management Agencies" (unpublished document). May 15, 1981. U.S. Department of Agriculture, Forest Service, Rocky Mountain Experiment Station, Ft. Collins, Colorado.

Hose, Richard K. 1977. Structural Geology of the Confusion Range, West-Central, Utah. Professional Paper 971. USDI, Geological Survey, Salt Lake City, Utah.

Howell, J. 1940. "Pinyon and Juniper--A Preliminary Study of Volume, Growth and Yield." Bulletin 71, Regulation 8. U.S. Department of Agriculture, Soil Conservation Service, Salt Lake City, Utah.

Hubbard, Julie. 1985. "Wasatch National Forest Plan Amendment Expectations" (personal communication). February 1, 1985. U.S. Department of Agriculture, Forest Service, Wasatch-Cache National Forest, Salt Lake City, Utah.

Johnson, Joseph L. (Editor). 1984. "Exploration for Ore Deposits of the North American Cordillera" in Field Trip Guidebook. Presented at the Regional Symposium for the Association of Exploration Geochemists. Reno, Nevada.

Jungst, Steven. 1978. "Projecting Future Use of the National Forest Wilderness System." Cooperative Agreement 13-522. Prepared for the U.S. Department of Agriculture, Forest Service, Rocky Mountain Experiment Station, Ft. Collins, Colorado.

Keener, Will. 1987. "Still One Discovery Away From a Boom" in Western Oil World. May 1987. pp. 12-15.

Kerns, G. J. and R. L., Jr. 1984. "Geology of Northwest Utah, Southern Idaho, and Northeast Nevada." Publication 13, Utah Geological Association, Salt Lake City, Utah.

Klessig, P. J. 1984. "History and Geology of the Alligator Ridge Gold Mine, White Pine County, Nevada" in Field Trip Guidebook. Presented at the Regional Symposium for the Association of Exploration Geochemists, Reno, Nevada.

Koehler, David A. and Redente, Edward F. 1980. "Revegetation Techniques on Disturbed Lands Associated with Oil Shale Development." Thirty Second Annual Meeting of the Society for Range Management.

Koff, Leonid R. 1987. "Great Basin May Be Kuwait of U.S." in Western Oil World. May 1987. pp 12-15.

Kretshmer, E. L. 1984. "Geology of the Pinson Mine, Humboldt County, Nevada." Report 40. Nevada Bureau of Mines and Geology, Reno, Nevada. pp. 52-55.

Lamarra, M. and Miller, K. 1980. "An Aquatic Inventory of the Streams of the East Slope of the Deep Creek Mountains, Utah" (unpublished document). USDI, Bureau of Land Management, House Range Resource Area, Fillmore, Utah.

Larson, Stephen. 1981. "Threatened and Endangered Species Inventory" (unpublished document). December 1981. U.S. Department of the Interior, Bureau of Land Management, Salt Lake District Office, Salt Lake City, Utah.

Leifeste, B. 1978. "Pacific Southwest Inter-Agency Committee (PSIAC) Methodology for Estimating Sediment Yield on Semiarid Watersheds and Relationship to Inventory Data Base." Nevada-Utah Fiscal Year 1979 Watershed Workshop. December 1978. USDI, Bureau of Land Management, Denver, Colorado.

Lemmon, D. M. 1964. "Mineral and Water Resources in Utah." Bulletin 73. Utah Geological and Mineralogical Survey, Salt Lake City, Utah.

Mabey, Don R. et. al. 1983. "Regional Gravity and Magnetic Anomalies in the Northern Great Basin and Range Province." Special Report 13. Geothermal Resources Council. pp 307-316.

Maurer, R. E. 1970 "Geology of the Cedar Mountains, Tooele County, Utah." Master's Thesis. University of Utah, Department of Geology, Salt Lake City, Utah.

Meese, Edwin III. 1988. "Solicitor's Opinion Regarding Implied Reserved Wilderness Water Rights." July 28, 1988. Office of the Attorney General, Washington, D. C.

Meeuwig, R. O. 1979. "Growth Characteristics of Pinyon-Juniper Stands in the Western Great Basin." Paper INT-238. U.S. Department of Agriculture, Forest Service, Ogden, Utah.

Meeuwig, R. O. 1980. "Point and Line-Intersect Sampling in Pinyon-Juniper Woodlands." U.S. Department of Agriculture, Forest Service, INT Experiment Station, Ogden, Utah.

Meeuwig, R. O., and Cooper, S. V. 1980. "Site Quality and Potential Yield of Pinyon-Juniper Stands in Nevada." U.S. Department of Agriculture, Forest Service, INT Experiment Station, Ogden, Utah.

Messenger, Harold M., III. 1980. "CRIB Form for Mineral Resource Inventory, Utah Geologic and Mineral Survey Report." Prepared for the USDI, Bureau of Land Management, Salt Lake District Office, Salt Lake City, Utah.

Mitchell, Robert; Buffa, Joelle; and Kidd, Gary. 1982. "Water Consumption in the Tooele Environmental Impact Statement Area" (personal communication). November 22, 1982. USDI, Bureau of Land Management, Salt Lake District Office, Salt Lake City, Utah.

Molenaar, Cornelius M.; Sandburg, Charles A.; and Powers, Richard B. 1983. Petroleum Potential of Wilderness Lands, Utah. Map I-1545. U.S. Department of the Interior, Geological Survey, Salt Lake City, Utah.

Motter, John W. and Chapman, Peter E. 1984. "Sediment-Host Precious Metal Deposits, Northumberland Gold Deposit, Nye County, Nevada" in Field Trip Guidebook. Presented at the Regional Symposium for the Association of Exploration Geochemists, Reno, Nevada.

Mountain Area Planners. 1970. Beaver County Master Plan Studies: Economic, Population, and Housing Study. July 1970. Salt Lake City, Utah.

Mountain Area Planners. 1972. A Master Plan for Tooele County and Municipalities 1970-1990. Salt Lake City, Utah.

Murphy, Peter J. 1980. Geothermal Resources of Utah. Map. Utah Geological and Mineral Survey, Salt Lake City, Utah.

Mutschler, F. E., et. al. 1981. "Granite Molybdenite Systems" in Economic Geology. Volume 76. pp. 874-897.

Neumann, Loretta and Reinberg, Kathleen M. 1988. Cultural Resources and Wilderness. Paper presented to the American Society for Conservation Archaeology, April 27, 1988, Phoenix, Arizona.

Nickens, Paul R.; Larralde, Sigwa L.; Tucker, Gordon C. Jr. 1981. A Survey of Vandalism to Archaeological Resources in Southwestern Colorado. BLM Cultural Resources Series 11, Denver, Colorado.

Ninety-Fourth Congress of the United States. 1976. Federal Land Policy and Management Act. Public Law 94-579. U.S. Government Printing Office, Washington, D.C.

Nolan, T. B. 1935. "The Gold Hill Mining District, Utah." Professional Paper 177. U.S. Department of the Interior, Geological Survey, Salt Lake City, Utah.

Oliviera, Michael E. 1975. "Geology of the Fish Springs Range, Utah." Master Thesis. Brigham Young University. Provo, Utah.

Paul Nelson Associates, Inc. 1981. Millard County, Utah, Comprehensive Development Plan. January 1981. Prepared for the Millard County Planning Commission, Delta, Utah.

Paul Nelson Associates, Inc. 1983-1986. Intermountain Power Project Socioeconomic Impact Monitoring Reports. Intermountain Power Agency, Salt Lake City, Utah; and Los Angeles Department of Water and Power, Los Angeles, California.

Pera, E. M. et al. 1977. "Leasable Mineral and Waterpower Land Classification Map of the Tooele Quadrangle, Utah. Open File Report 77-602. U.S. Department of the Interior, Geological Survey. Salt Lake City, Utah.

Perry, Lee I. and McCarthy, Blair M. 1977. "Lead and Zinc in Utah." Open File Report No. 22. Utah Geologic and Mineral Survey, Salt Lake City, Utah.

Pinson Mining Company. 1985. "Sediment-Hosted Gold Deposits" in Field Trip Guidebook. Presented at the Regional Symposium for the Association of Exploration Geochemists, Reno, Nevada. pp. 11-16.

Plahuta, J. T. 1986. "Geology of the Buckhorn Mine." Report 41. Nevada Bureau of Mines and Geology, Reno, Nevada.

Platt, J. B. 1976. "Bald Eagles Wintering in a Utah Desert" in American Birds. Volume 30, Number 4. National Audubon Society, New York, New York. pp. 783-788.

Poole, Forest G. et al. 1983. "Major Episodes of Petroleum Generation in Part of the Northern Great Basin." Special Report 13. Geothermal Resources Council. pp. 207-214.

Poole, Forest G. and Claypool, G. E. "Petroleum Source Rock Potential and Crude Oil Correlation in the Great Basin" (unpublished document). Rocky Mountain Association of Geologists, Denver, Colorado.

Rees, M. N. 1986. "A Fault-Controlled Trough through a Carbonate Platform: The Middle Cambrian House Range Embayment." Volume 97, Geological Society of America, pp. 1054-1069.

Rigby, E. K. (Editor). 1958. "Geology of the Stansbury Mountains, Tooele County, Utah" in Guidebook to the Geology of Utah. No. 13. Utah Geological Society, Salt Lake City, Utah.

Roberts, Ralph T. 1984. "The Carlin Story." Report 40. Nevada Bureau of Mines and Geology, Reno, Nevada. pp. 71-80.

Romberger, S. B. 1986. "Ore Deposits No. 9, Disseminated Gold Deposits" in Geoscience Canada. Volume 13, No. 1.

Science Applications, Inc. (SAI). 1982a. Minerals Resource Evaluation of Wilderness Study Areas Administered by the Bureau of Land Management; The Salt Lake District. October 1, 1982. U.S. Department of Energy, Oak Ridge, Tennessee.

Science Applications, Inc. 1982b. Minerals Resource Evaluation of Wilderness Study Areas Administered by the Bureau of Land Management: The Richfield District. October 1, 1982. U.S. Department of Energy, Oak Ridge, Tennessee.

Silberman, Miles L. 1983. "Geochronology of Hydrothermal Alteration and Mineralization: Tertiary Epithermal Precious Metal Deposits in the Great Basin." Special Report 13. Geothermal Resources Council. pp. 287-303.

Simoneit, Bernd R. 1983. "Organic Matter Maturation and Petroleum Genesis: Geothermal vs. Hydrothermal." Special Report 13. Geothermal Resources Council. pp. 215-240

Simons, Frank S. and Prinz, William C. 1973. "Gold." Professional Paper 820. U.S. Department of the Interior, Geological Survey, Salt Lake City, Utah. pp. 263-276.

Sparks, Earl. 1981. "Species List of Vertebrate Wildlife That Inhabit Utah." Publication 81-2. Utah Division of Wildlife Resources, Salt Lake City, Utah.

Stutz, Howard C. 1974. "Grazing Pressure Effects on Atriplex canescens" (personal communication). April 2, 1974. Brigham Young University, Provo, Utah.

Thomson, K. C. 1970. "Mineral Deposits of the Deep Creek Mountains, Tooele and Juab Counties, Utah." Ph.D Thesis. University of Utah, Salt Lake City, Utah.

Thomson, K. C. 1973. "Minerals Deposits of the Deep Creek Mountains, Tooele and Juab Counties, Utah." Bulletin 99. Utah Geological and Mineral Survey Salt Lake City, Utah.

Thornbury, W. D. 1965. Regional Geomorphology of the United States. John Wiley and Sons, Inc. New York, New York.

Tingley, T. V. and Bonham, H. F., Jr. 1984. "Sediment Hosted Precious Metal Deposits of Northern Nevada." Report 40. Nevada Bureau of Mines and Geology, Reno, Nevada.

Tingley, T. V. and Bonham, H. F., Jr. 1986. "Precious Metal Mineralization in Hot Spring Systems, Nevada-California." Report 41. Nevada Bureau of Mines and Geology, Reno, Nevada.

Tooker, E. W. and Roberts, R. E. 1971. "Structures Related to Thrust Faults in the Stansbury Mountains, Utah" Professional Paper 750-B. U.S. Department of the Interior, Geological Survey Salt Lake City, Utah. pp. B1-B12.

Tooker, E. W. and Johnson, M. G. 1980. Preliminary Map of Gold Provinces in the Conterminous United States. U.S. Department of the Interior, Geological Survey. Open File Report 79-576S.

Tuftin, S. E. 1987. Mineral Resources of a Part of the Swasey Mountain and Howell Peak Wilderness Study Areas, Millard County, Utah. U.S. Bureau of Mines, MLA 71-87.

University of Utah (UofU), Bureau of Economic and Business Research. 1979. "1979 Utah Statistical Abstract." January 1979. Salt Lake City, Utah.

University of Utah, Bureau of Economic and Business Research. 1982. "Utah Economic and Business Review." Volume 42, No. 6. January 1982. Salt Lake City, Utah.

University of Utah, Bureau of Economic and Business Research. 1987. "Profile of Tooele County (Draft)." August 1987. University of Utah, Salt Lake City, Utah.

U.S. Air Force. 1986. Official Response of the 6501st Ranges to the BLM Utah Statewide Wilderness Draft Environmental Impact Statement (personal communication). August 14, 1986. Hill Air Force Base, Utah.

U.S. Department of Agriculture, Forest Service. 1979. User Guide to Vegetation, Mining, and Reclamation in the West. November 1979. Ogden, Utah.

U.S. Department of Agriculture, Animal and Plant Health Inspection Service (APHIS). 1988. Animal Damage Control, Rural Operational Activity Summaries 1986 and 1987: (personal communications). March 1988. Salt Lake City, Utah.

U.S. Department of Agriculture, Soil Conservation Service. 1980. "Soil Descriptions and Interpretations for Portions of Tooele County, Utah" (unpublished document). Prepared for the USDI, Bureau of Land Management, Salt Lake District, Salt Lake City, Utah.

U.S. Department of Commerce, Bureau of the Census. 1981. 1980 Census of Population and Housing, Utah. Publication No. PHC 80-V-46. March 1981. Bureau of the Census, Washington, D.C.

U.S. Department of Commerce, Bureau of Economic Analysis. 1982. Regional Economic Information System Employment by Type and Broad Industrial Sources: 1976-1980. April 1982. U.S. Government Printing Office, Washington, D.C.

U. S. Department of Commerce, Bureau of Economic Analysis. 1983. General,Social, and Economic Characteristics, Utah, 1980 Census of Population. June 1983. U.S. Government Printing Office. Washington, D.C.

U. S. Department of Commerce, Bureau of Economic Analysis. 1984. Regional Economic Information System, Employment by Type and Broad Industrial Sources, 1978-1982. April 1984. U.S. Government Printing Office, Washington, D.C.

U. S. Department of Defense (DoD). 1988. Strategic and Critical Materials Report to the Congress, September 1988. Washington, D.C.

U.S. Department of Employment Security. 1987. "Preliminary 1987 Labor Market Information" (unpublished document). Job Service, Salt Lake City, Utah.

U.S. Department of the Interior, Bureau of Land Management. 1973. "West Desert Planning Area, Unit Resource Analysis and Management Framework Plan" (unpublished documents). June 1973. Salt Lake District Office, Salt Lake City, Utah.

U.S. Department of the Interior, Bureau of Land Management. 1977. "Trout Creek Habitat Management Plan" (unpublished document). House Range Resource Area, Fillmore, Utah.

U.S. Department of the Interior, Bureau of Land Management. 1978. Wilderness Inventory Handbook: Policy, Direction, Procedures, and Guidance for Conducting Wilderness Inventory on the Public Lands. September 27, 1978. U.S. Government Printing Office, Washington, D.C.

U.S. Department of the Interior, Bureau of Land Management. 1979a. Interim Management Policy and Guidelines for Lands Under Wilderness Review. December 12, 1979. U.S. Government Printing Office, Washington D.C.

U.S. Department of the Interior, Bureau of Land Management. 1979b. "Little Sahara Recreation Area Management Plan" (unpublished document). August 1979. House Range Area, Fillmore, Utah.

U.S. Department of the Interior, Bureau of Land Management. 1980a. BLM Intensive Wilderness Inventory: Final Decision. November 1980. Utah State Office, Salt Lake City, Utah.

U.S. Department of the Interior, Bureau of Land Management. 1980b. "Skull Valley-Lakeside Class II/Survey Unit 3" (unpublished document). No. 045-23. Salt Lake District, Salt Lake City, Utah.

U.S. Department of the Interior, Bureau of Land Management. 1980c. "West Desert Habitat Management Plan" (unpublished document). October 1980. Warm Springs resource Area, Fillmore, Utah.

U.S. Department of the Interior, Bureau of Land Management. 1981a. "Visual Resource Management Training Session Material" (personal communication). April 1981. Salt Lake District Offices, Salt Lake City, Utah.

U.S. Department of the Interior, Bureau of Land Management. 1981b. "Wilderness Management Policy." Federal Register Notice. September 24, 1981. U.S. Government Printing Office, Washington, D.C.

U.S. Department of the Interior, Bureau of Land Management. 1981c. "Erosion Condition Classifications From Soil-Vegetation Inventory Method Soil Surface Factor Computation" (unpublished document). Salt Lake District Office, Salt Lake City, Utah.

U.S. Department of the Interior, Bureau of Land Management. 1981d. "Deep Creek Mountains Habitat Management Plan" (unpublished document). November 1981. House Range Resource Area, Fillmore, Utah; Pony Express Resource Area, Salt Lake City, Utah; and Shell Resource Area, Ely, Nevada.

U.S. Department of the Interior, Bureau of Land Management. 1982a. "Tooele Planning Area Unit Resource Analysis" (unpublished document). Salt Lake District Office, Salt Lake City, Utah.

U.S. Department of the Interior, Bureau of Land Management. 1982b. "Wilderness Study Policy: Policies, Criteria, and Guidelines for Conducting Wilderness Studies on Public Lands." Federal Register Notice. Volume 49, No. 23. February 3, 1982. U.S. Government Printing Office, Washington, D. C.

U.S. Department of the Interior, Bureau of Land Management. 1982c. "BMB Enterprises, Inc. Hydroelectric Generating Facility, Deep Creek Mountains of Western Utah." Environmental Assessment No. UT-050-83-7, Richfield District Office, Richfield, Utah.

U.S. Department of the Interior, Bureau of Land Management. 1983a. Final Tooele Grazing Environmental Impact Statement. September 1983. U.S. Government Printing Office, Denver, Colorado.

U.S. Department of the Interior, Bureau of Land Management. 1983b. "Prohibition Against Leasing in BLM Wilderness Study Areas Under Section 603 of the Federal Land Policy Management Act" (personal communication). March 7, 1983. Washington, D.C.

U.S. Department of the Interior, Bureau of Land Management. 1983c. "Grazing Allotment Files" (unpublished document). November 1983. Pony Express Resource Area, Salt Lake City, Utah.

U.S. Department of the Interior, Bureau of Land Management. 1983d. "Issues Discussed at April 4 Wilderness Environmental Impact Statement Meeting in Burns" (personal communication). April 25, 1983. Washington Office, Planning and Environmental Coordination Staff, Washington, D.C. 2 pp.

U.S. Department of the Interior, Bureau of Land Management. 1984a. Land Status Maps, Salt Lake and Richfield District Offices, Salt Lake City and Richfield, Utah.

U.S. Department of the Interior, Bureau of Land Management. 1984b. Mineral Plats. Salt Lake and Richfield District Offices, Salt Lake City and Richfield, Utah.

U.S. Department of the Interior, Bureau of Land Management. 1984c. "Tooele Planning Area Management Framework Plan" (unpublished document). Pony Express Resource Area, Salt Lake City, Utah.

U.S. Department of the Interior, Bureau of Land Management. 1984d. "Tooele Planning Area, Multiple Use Management Decisions" (unpublished document). May 1984. Salt Lake District, Salt Lake City, Utah.

U.S. Department of the Interior, Bureau of Land Management. 1984e. Scoping the Utah Statewide Wilderness Environmental Impact Statement--Public Scoping Issues and Alternatives. July 20, 1984. U.S. Government Printing Office, Denver, Colorado.

U.S. Department of the Interior, Bureau of Land Management. 1984f. Tooele Planning Area Resource Management Plan. U.S. Government Printing Office, Denver, Colorado.

U.S. Department of the Interior, Bureau of Land Management. 1986a. West Desert Pumping Project Draft Environmental Impact Statement, U.S. Government Printing Office, Denver, Colorado.

U.S. Department of the Interior, Bureau of Land Management. 1986b. Motorized Vehicle Guide, Tooele County. U.S. Government Printing Office, Denver, Colorado.

U.S. Department of the Interior, Bureau of Land Management. 1986c. "U.S. Pollution Control, Inc. Powerline Right-of-Way Environmental Assessment" (unpublished document). EA NO. UT-020-86-16. Salt Lake District Office, Salt Lake City, Utah.

U.S. Department of the Interior, Bureau of Land Management. 1986d. Visual Resource Contrast Rating: BLM Handbook. U.S. Government Printing Office, Denver, Colorado.

U.S. Department of the Interior, Bureau of Land Management. 1986e. Utah BLM Statewide Wilderness Draft Environmental Impact Statement, Volumes I - VI. January 1986. U.S. Government Printing Office, Denver, Colorado.

U.S. Department of the Interior, Bureau of Land Management. 1987a. "Timpie Solar Evaporation Pond System Environmental Assessment" (unpublished document). Prepared by Bio/West, Inc., Salt Lake District Office, Salt Lake City, Utah

U.S. Department of the Interior, Bureau of Land Management. 1987b. Final Resource Management Plan Environmental Impact Statement for the Warm Springs Resource Area. U.S. Government Printing Office, Denver, Colorado.

U.S. Department of the Interior, Bureau of Land Management. 1987c. Final Resource Management Plan and Environmental Impact Statement for the House Range Resource Area. October 1987. U.S. Government Printing Office, Denver, Colorado.

U.S. Department of the Interior, Bureau of Land Management. 1987d. "BLM Geologist Minerals Data Review Reports" (file material), Utah State Office, Salt Lake City, Utah.

U.S. Department of the Interior, Bureau of Land Management. 1988. BLM Cultural Resource Site Maps (file data). Utah State Office, Salt Lake City, Utah.

U.S. Department of the Interior, Bureau of Mines. 1980. Mineral Yearbooks 1933-1980. Salt Lake City, Utah.

U.S. Department of the Interior, Bureau of Mines. 1987a. Mineral Resources of a Part of the Wah Wah Mountains Wilderness Study Area (UT-050-073/040-205), Beaver and Millard Counties, Utah. MLA 1-87. Intermountain Field Operations Center, Denver, Colorado.

U.S. Department of the Interior, Bureau of Mines. 1987b. Mineral Investigation of a Part of The North Stansbury Mountains Wilderness Study Area (UT-020-089), Tooele County, Utah. MLA 49-87. Intermountain Field Operations Center, Denver, Colorado.

U.S. Department of the Interior, Bureau of Mines. 1987c. Mineral Resources of a Part of the Notch Peak Wilderness Study Area (UT-050-078), Millard County, Utah. MLA 51-87. Intermountain Field Operations Center, Denver, Colorado.

U.S. Department of the Interior, Bureau of Mines. 1987d. Mineral Resources of a Part of the Swasey Mountain (UT-050-061) and Howell Peak (UT-050-077) Wilderness Study Areas, Millard County, Utah. MLA 71-87. Intermountain Field Operations Center, Denver, Colorado.

U.S. Department of the Interior, Bureau of Reclamation. 1975. Salinity and Sediment Study, Upper Colorado River Basin, Utah, Colorado, Wyoming. June 1975. Salt Lake City, Utah.

U.S. Department of the Interior, Geological Survey. 1978. Ecosystems of the United States. Map. Reston, Virginia.

U.S. Department of the Interior, Geological Survey. (Edited by E.W. Tooker.) 1985. "Geologic Characteristics of Sediment and Volcanic-Hosted Disseminated Gold Deposits--Search for an Occurrence Model" (edited by E.W. Tooker). Bulletin 164b. Salt Lake City, Utah.

U.S. Department of the Interior, Geological Survey. (Edited by D.L. Mosier, W. David Menzie, and F.T. Kleinhampl.) 1986a. "Geologic and Grade Tonnage Information on Tertiary Epithermal Precious- and Base-Metal Vein Districts Associated with Volcanic Rocks". Bulletin 1666. Salt Lake City, Utah.

U.S. Department of the Interior, Geological Survey. (Edited by D.P. Cox and D.A. Singer.) 1986b. "Mineral Deposit Models." Bulletin 1693. Salt Lake City, Utah.

U.S. Department of the Interior, National Park Service. 1982. The Nationwide Rivers Inventory. Washington, D.C.

U. S. General Accounting Office. 1987. Cultural Resources: Problems Protecting and Preserving Federal Archaeological Resources. Report to Congressional Requesters, GAO/RCED-88-3, December 15, 1987.

Utah Counties. 1986. Consolidated Local Government Response to the Utah BLM Statewide Wilderness Draft Environmental Impact Statement (personal communication). June 27, 1986. Salt Lake City, Utah.

Utah Department of Employment Security. 1980. "Selected 'Annual Reports' (1970-1980)" (unpublished document). Salt Lake City, Utah.

Utah Department of Employment Security. 1982a. "Social Economics Information" (unpublished document). Salt Lake City, Utah.

Utah Department of Employment Security. 1982b. Labor Market Information, Wasatch Front South District, Third Quarter 1982. November 1982. Salt Lake City, Utah.

Utah Department of Highways. 1971. "Materials Inventory for Tooele County" (unpublished document). August 1971. Salt Lake City, Utah.

Utah Department of Natural Resources and Energy, Division of Wildlife Resources. 1975. Utah Big Game Investigations and Management Recommendations Book. June 13, 1975. Salt Lake City, Utah.

Utah Department of Natural Resources and Energy, Department of Social Services. 1977. "A Summary of Utah's Air Conservation Program" (unpublished document). Division of Health, Salt Lake City, Utah.

Utah Department of Natural Resources and Energy, Division of Wildlife Resources. 1977. Utah Big Game Investigations and Management Recommendations Book. June 15, 1977. Salt Lake City, Utah.

Utah Division of Natural Resources and Energy, Bureau of Air Quality. 1980. "Utah Emissions Inventory 1980." Division of Health, Salt Lake City, Utah.

Utah Department of Natural Resources and Energy, Outdoor Recreation Agency. 1980. Utah Outdoor Recreation Plan, 1980 SCORP. Salt Lake City, Utah.

Utah Department of Natural Resources and Energy, Division of Wildlife Resources. 1981a. "Wildlife Population Estimates by Allotments" (personal communication). March 13, 1982. Springville, Utah.

Utah Department of Natural Resources and Energy, Division of Wildlife Resources. 1981b. The 1981 Utah Big Game Investigations and Management Recommendations Book. Publication 81-4. Salt Lake City, Utah.

Utah Department of Natural Resources and Energy, Division of Wildlife Resources. 1982. The 1982 Utah Big Game Investigations and Management Recommendations Book. May 27, 1982. Salt Lake City, Utah.

Utah Department of Natural Resources and Energy, Division of Wildlife Resources. 1983a. "Hunter Day Estimates for Tooele County" (personal communication). March 2, 1983. Springville, Utah.

Utah Department of Natural Resources and Energy, Division of Wildlife Resources. 1983b. The 1983 Utah Big Game Investigations and Management Recommendations Book. Salt Lake City, Utah.

Utah Department of Natural Resources and Energy, Division of Parks and Recreation. 1985. 1985 Utah Statewide Comprehensive Outdoor Recreation Plan. Salt Lake City, Utah.

Utah Department of Natural Resources and Energy, Board of State Lands and Forestry. 1986. Resolution. April 11, 1986.

Utah Department of Natural Resources and Energy, Division of Water Rights. 1987. "Water Filings Information" (file data). Salt Lake City, Utah.

Utah Department of Natural Resources and Energy, Division of State Lands and Forestry. 1988. "File Information on Use of State Lands" (personal communication). Salt Lake City, Utah.

Utah Department of Natural Resources and Energy, Division of Water Rights. 1988. "Surface Water Supplies" (personal communication from William L. Burton). March 18, 1988. Salt Lake City, Utah.

Utah Office of the Planning Coordinator. 1980. Utah: 2000. March 1980. Salt Lake City, Utah. 65 pp.

Utah Office of Planning and Budget. 1984. Utah Baseline Provisional Population Projections 1983-2000. April 1984. Salt Lake City, Utah.

Utah Office of Planning and Budget. 1987. 1987 Baseline Projections. April 1987. Salt Lake City, Utah.

Walters, R. E. and Heggen, A. W. 1980. An Inventory of the Wildlife of the Deep Creek Mountains Area. USDI, Bureau of Land Management. House Range Resource Area, Fillmore, Utah.

Welsh, Dr. Stanley L. 1979. Illustrated Manual of Proposed Endangered and Threatened Plants of Utah. USDI, Fish and Wildlife Service and Bureau of Land Management, and USDA, Forest Service. U.S. Government Printing Office, Washington, D.C. 317 pp.

Welsh, Dr. Stanley L. 1982. "Threatened and Endangered Plants in the Tooele Environmental Impact Statement Area" (personal communication). November 11, 1982. Brigham Young University, Provo, Utah.

Welsh, Dr. Stanley L. 1986. "Occurrence of Penstemon dolius in the Deep Creek Mountains WSA" (personal communication). March 3, 1986. Brigham Young University, Provo, Utah.

Wildesen, Leslie E. 1982. The Farthest Frontier of All: A Cultural Resource Overview of the River of No Return Wilderness, Idaho. Cultural Resource Report No. 8, USDA, Forest Service, Intermountain Region, Ogden, Utah.

Wildesen, Leslie E. 1985. Dilemma: Should Wilderness Areas Preserve Historic and Archaeological Cultural Resources? Colorado Heritage News 5,7. Colorado Historical Society, Denver, Colorado.

Wilkins, Joe, Jr. 1984. "The Distribution of Gold and Silver Bearing Deposits in the Basin and Range Province, Western United States" in Arizona Geological Society Digest. Volume 45. Phoenix, Arizona.

Wong, George. 1983. "Preliminary Map of the Resource Areas in the Basin and Range Province of Utah." Preliminary OFR 83-722. U.S. Department of the Interior, Geological Survey, Salt Lake City, Utah.

v. 2
c. 1

#BLM-UT-ES-90-002-4332